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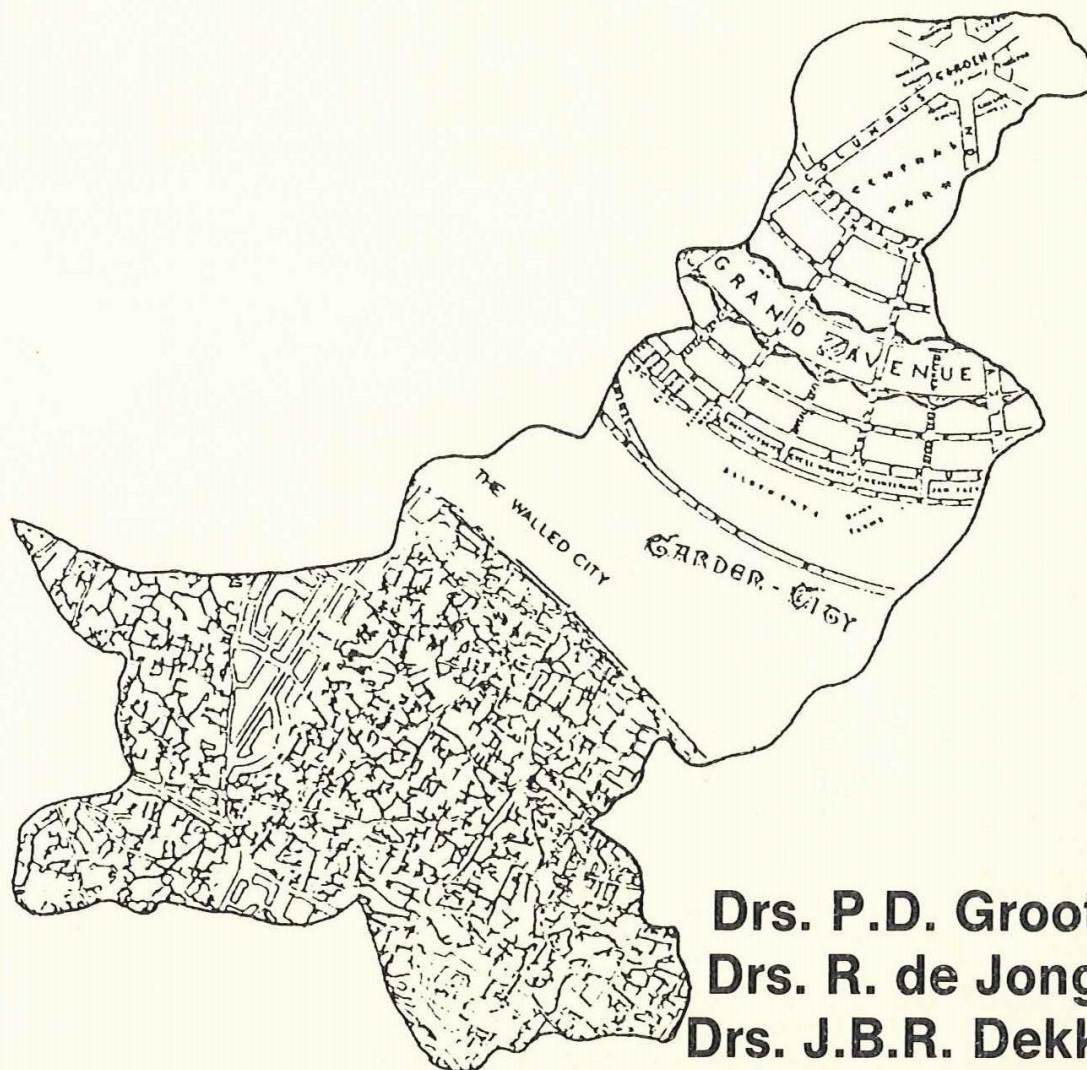
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URBAN PLANNING IN LAHORE

a confrontation with real development



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Urban planning in Lahore

A confrontation with real development

Peter Groote, René de Jonge, Jan Dekker, Jan de Vries

Revised version of a Master Thesis Regional Geography, Faculty of Spatial Sciences, University of Groningen, 1988, written by Groote and De Jonge and supervised by Dekker and De Vries.

"City forms and city plans are not the intended results of planners seeking to create a city of maximum quality for its users, but rather are the by-products of forces whose intended goals historically have been power or profit"

Peter Marcuse: 'the grid as city plan: New York City and laissez-faire planning in the nineteenth century'; *planning perspectives*; 1987, nr.3.

Contents

Introduction	4
Chapter 1: The research.....	6
1.1 Description of the research.....	6
1.2 The choice of methods	6
1.3 The choice of the area of study	7
Chapter 2: The planning idiom in Pakistan	12
2.1 Introduction	12
2.2 The British idiom	12
2.3 The modern idiom	14
2.4. Evaluation of the different planning doctrines	15
2.5 The indigenous style of urban development	15
Chapter 3: The planned development of Lahore	19
3.1 Lahore improvement trust	19
3.2 Lahore Development Authority	19
3.3 Housing and Physical Planning Department	23
3.4 The Model Town Society	23
3.5 The Master Plan (1966) of Lahore.	24
3.6 Lahore Urban Development and Traffic Study	26
3.7 Land acquisition	29
Chapter 4: The result of the planned activities.....	33
4.1 The record of planned schemes	33
4.2 Theoretics on planned schemes	35
4.3. The development of city and schemes	36
4.4 The three schemes: history and general description.....	38
4.4.1 Model Town	38
4.4.2 New Garden Town	41
4.4.3 Model Town Extension	42
4.4.4 Some facts about the study area	43
Chapter 5: Land use.....	45
5.1 Planning.....	45
5.2 Development	48
Chapter 6: Roads	51
6.1 Planning.....	51

6.2 Development	51
Chapter 7 Housing characteristics	55
7.1 Planning	55
7.2 Development	58
Chapter 8 Socio-economic characteristics	66
8.1 Planning	66
8.2 Development	68
Chapter 9 Facilities and services	72
9.1 Planning and development of public facilities.	72
Water supply.	72
Sewerage and drainage	72
Solid waste collection and disposal	72
Electricity	72
Gas	73
Public transport	73
Dispensaries, clinics and doctors	75
Education	76
9.2 Confrontation of planned and realized public facilities	79
9.3 The use of public facilities	81
Religious institutions	81
Educational institutions	82
Medical institutions	82
9.4 Planning and development of shopping facilities	82
Chapter 10: outlook of the schemes	89
10.1 Vegetation	89
Planning	89
Development	90
Planning	94
Development	94
Chapter 11 Review, conclusions and recommendations	95
11.1 General remarks	95
11.2 Urban planning in Lahore	95
11.3 Development of city and schemes	97
11.4 Planning and development; some inferential propositions	99

APPENDIX 1 MAPS.	101
Map 1: dominant land use in study-area	102
Map 2: dominant land use in study-area, simplified.	103
Map 3: commercial facilities in study-area	104
Map 4: public facilities in study-area	105
Map 5: secondary land use in study-area	106
Map 6: secondary land use in study-area, simplified	107
Map 7: width of paved road in study-area.....	108
Map 8: width of road between walls in study-area	109
Map 9: type of road in study-area	110
Map 10: size of dwellings in study-area.....	111
Map 11: age of dwellings in study-area	112
Map 12: state of maintenance of dwellings in study-area	113
Map 13: type of dwellings in study-area	114
Map 14: number of floors per dwelling in study-area.....	115
Map 15: plot size in study-area	116
Map 16: number of dwellings per plot in study-area	117
Map 17: kacha dwellings in study-area.....	118
Map 18: waste depots in study-area	119
Map 19: illegal commercial facilities in study-area	120
Map 20: verdure on plots in study-area.....	121
Map 21: verdure along streets in study-area	122
Appendix 2 List of interviews	123
Appendix 3 glossary and conversion table.....	124
Glossary.....	124
Conversion table.....	124
Bibliography.....	125
Notes.....	127

Introduction

This book is the revised edition of a master's thesis. As such it was the last task of our study in human geography at the University of Groningen, the Netherlands. Its basis was laid in October 1985, when the Geographical Institute of the University of Groningen made a study tour through Pakistan. Both authors were members of the excursion group, which visited several cities spread all over the country. During the tour the Staff of the Geographical Institute expressed the wish to concentrate part of its research program in Pakistan and to establish formal ties with Pakistani institutions. With this knowledge in mind, and interested in the country and its population, contacts were made during the tour.

Pakistan, as other developing countries, displays a fast urban development. To make research into urban geography, Pakistan's cultural capital Lahore is a very attractive place. Before World War Two already urban development-experiments took place there. Additionally Lahore faced a large-scale migration after Partition (1947).

The purpose of this study was to investigate the chances for urban planning for the middle-income groups. This was worked out via a confrontation of theory and practice. Consequently, it was also tried to study the desirability of this kind of planning.

The most important part of the study consisted of a field survey in the impressive city of Lahore, which took place in the period of August-December 1986. This stay of four months in Pakistan is among the most important experiences of our life. The result was that Pakistan gained a place in our hearts forever.

Many people have contributed to the possibility of our stay in Lahore and its success. There is no doubt that we will forget some people in expressing our thanks. Also we realize that some Pakistani will refuse these, as it is part of their life to lend support and love to other people. First we want to thank the inhabitants of Pakistan in general. They made it possible for us to learn and understand such a large part of their way of living.

Also we are grateful to all the students and staff members of the Department of Geography of the University of the Punjab. They were very hospitable, and accepted us as one of them. Special thanks must go to Professor A.A. Abassi and Dr. Fareeha Zafar. They were not only our supervisors, but also provided us with help, advice and encouragement, and brought us into contact with many other experts. It is impossible to mention all the students individually. They showed us all the ins and outs of life and research in Pakistan, were very helpful and have spent a lot of pleasant and interesting hours with us in our and their scarce spare time. Probably they will never realize how important they were for us, but we will never forget!

We also received support from the Lahore Development Authority. Mr. Shaukat Jamal and Mr. Sheikh Abdul Rashid introduced us into the organisation. We are especially grateful to Mr. Laikh Yamin Khan, for the countless interesting conversations with him and the maps he provided, and to Mr. Sanaullah Hashmi, who spent a lot of time to answer our nearly infinite series of questions.

We are also very thankful to Mr. Ayub Qutub and Mr. Parvaiz Salahuddin, staff members of Pakistan Environmental Planning and Architectural Consultants Ltd. They provided us with critical notes and literature, and were a moral support for us. Moreover they supported us in the impression that Pakistan

certainly has the human resources to develop into a modern society, with its own values, norms and self-responsibility and fair chances for all.

Without the help of the drawing office of the Geographical Institute of the University of Groningen, it would have been impossible for us to draw the maps and diagrams.

The Office for International Cooperation and the Geographical Institute of the University of Groningen made it possible for us to perform research in Pakistan by lending their financial support.

We also thank Prof. Dr. R. Tamsma, drs. J. de Vries and drs. J.B.R. Dekker of the Geographical Institute of the University of Groningen. The help of drs. De Vries was indispensable and facilitated our task tremendously. He laid a firm basis for our contacts in Pakistan and was a great help by lending many practical instructions. He also launched the idea to undertake this research in Lahore. We received advice, encouragement and intellectual support from drs. Dekker, who was our supervisor in the Netherlands. Next we want to thank Wolters-Noordhof, publishers in Groningen. They provided us with atlases that were a welcome present for the library of the Department of Geography of the Punjab University. Mrs. Eileen Bloemsma and Miss Liesbeth Lageveen are thanked for correcting our English. Last but not least, we want to say thanks to Erika and Jeannette. They were a continuous source of encouragement and moral support, during our stay in Lahore as well as back home. Their bursts of impatience in the last year prompted us to press on with writing.

Chapter 1: The research

1.1 Description of the research

Both the objective of the research and the central question must be clarified beforehand. They must act as guidelines to the research. Small sideways can, and will be taken during the research and often have to be taken to clarify the concepts encountered on the main road, but this main road will never be lost out of sight.

The objective may be formulated as follows: "Which factors play which role in directing the relation between physical plans for the future urban area of a Third World city and the real development of that area?" Although the objective of the research may be the compass, setting out the specific future course remains the task of the researcher. His path is lightened by the central question, serving as a beacon on possibly unknown shores. In this study it was formulated thus: "What has been the effect of various planning policies, executed by various agencies in various periods on the development and functioning of Lahore and its population?" More important than a definition is the elaboration of the central question. Accents were placed in this case on the various stages that could be discerned when regarding planning policies. This resulted in studies of e.g. the different Master Plans of Lahore; the LDA-building regulations and "PC-1"'s; the time consumption processes; the attempts to institutionalize co-ordination, etc. "Urban development" was studied in planned schemes.

The thus elaborated questions resulted in a specific research-design. It consisted of a description- and a confrontation-section. In the descriptive section the various planning policies were classified in two "planning idioms". These were explicitly described, together with their respective periods of origin. Links to the development in other parts of Lahore were laid too. After this descriptive part the confrontation section was to be elaborated. In this section three confrontations were carried out. In the first place the different planning idioms were compared. Also connected with the descriptive part of the research was the comparison between the respective schemes. The last confrontation was the most important. Here the planning policies were compared with their respective schemes, to filter out their effect.

As the study was carried out under the banner of geography a few words must be said about the scale of the research. A deliberate choice was made to focus on a very small sub-local scale. This promised both very concrete and direct data and/or results, and a very intensive fieldwork-campaign. Moreover the important cultural factor could be grabbed much easier, as differences in this respect are less on this scale.

The whole research design can thus be said to be in line with the traditions of comparative regional geography. The temporal component deepens the integrative approach even further.

1.2 The choice of methods

The methods adopted can be named under three headings. Of these the methods of reporting were the simplest: the underlying book is written. The methods of data-collection were more diverse. They formed the fundament of the study and have shaped the end product. The following methods were used:

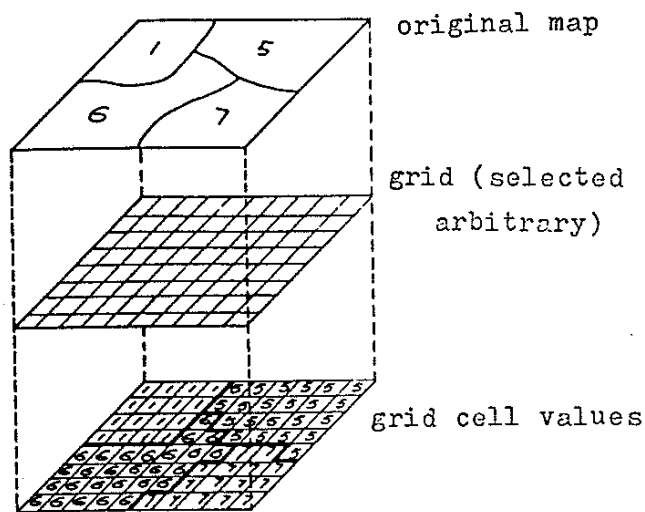
1. A study of literature. This has been done in the preparation phase, the fieldwork phase and the execution phase.
2. A field survey was carried out. This is the basis of geographical study. In the area of study certain characteristics were surveyed and mapped. These included the topics of land use, housing, image

& outlook and facilities & services. A total number of approximately 2700 plots, covering an area of 375 ha, were scrutinized. The results were 21 maps of the area (see appendix 2), containing information on for example: land use, size of dwelling, number of dwellings on the plot, age of the dwelling, state of maintenance of the dwelling, type and width of road, presence of greenery, presence of streetlights, presence and state of greenery on the plot, and special features.

3. Some other characteristics, (e.g. plot size) were surveyed from maps.
4. An inquiry was carried out by means of a questionnaire to recover socio-economic characteristics. This small scale inquiry was not meant for drawing "statistically significant" statements. The purpose was on the one hand to signalize trends, developments and behaviour, and residents' opinions of specific phenomena. On the other hand, statements and ideas obtained from interviews and literature could be checked.
5. A lot of information was obtained from personal interviews. These were held with local experts on urban planning, and with people with inside knowledge of the area (schoolteachers, shopkeepers, real estate brokers etc.).

A third category of methods adopted is concerned with the analysis of the collected data. The most important of these methods is the Geographical Information System USEMAP. This computer-based automatic cartographic program is grid-based. USEMAP¹ has been developed by I.T.C., the International Institute for Aerial Survey and Earth Sciences, in Enschede, the Netherlands (see De Bruyn 1982; De Bruyn & Van der Hulst 1984). Its principle is fairly easy (fig 1.1). At first the area of interest is overlaid with a grid. After that the various information-items for each grid cell are stored in a database.

Fig. 1.1: Transformation of original map values to grid cell values.



Source: Landschap, 1985.

1.3 The choice of the area of study

The area of study was not deliberately chosen before-hand. Therefore it was possible, up to a certain degree, to make a "negative" choice. Several stronger or weaker demands (or wishes) were explicitly

stated, enabling the delimitation of the whole possible domain to a few smaller areas. The final choice was then based on minor theoretical and practical preferences.

Five demands can be said to have been of major theoretical importance. The area of study:

- 1- Had to contain 3 or 4 planned schemes.
- 2- These schemes had to be based on the planning idioms discerned: a pre-partition British scheme, a "mixed" scheme (1960s), a modern scheme (after 1975).
- 3- The schemes must have been developed for the same target groups, preferably the middle-class.
- 4- They had to be located at approximately the same location in relation to the foci of the city. This to avoid differences in planning or development resulting from factors of "situation" on local scale.
- 5- The "sites" of the schemes were not to differ too much.

These demands, stemming from the research-proposal, were combined with some practical constraints and/or wishes. The study area was not to exceed the 10 square kilometre mark and the number of plots not the mark of 3,000. An area close to the Punjab University-New Campus was preferred, because the means of conveyance of the researchers were two bikes and/or four legs. Preferably the schemes had to be adjoining, to produce better and easier readable maps.

These wishes, constraints and demands resulted in a first selection of 3 possible areas of study: the Gulberg-area, the area (round) Model Town, and the Cantonment with other schemes (see figure 1.2). The last was abandoned because it had the disadvantage of being too far off, taking at least three quarters of an hour to reach it. The Gulberg-proposal was rejected because it was felt that the presence of two of the important commercial centres of Lahore (Main Market and Liberty Market) would be of too much disturbing influence.

Left was the Model Town area. It was started with an area consisting of Model Town, New Garden Town and Faisal Town, in combination with the interlaying Model Town Extension. After talks with experts² Faisal Town was dropped because it was explicitly meant for the lower-middle class, different from the other schemes.

The ultimate choice thus was a nearly square area containing the Model Town-blocks D,E and K, Garden Town Tariq-, Ataturk-, Aurangzeb-, Sher Shah- and Aibak-block and Model Town Extension L-, M- and N-block (partially) (figures 1.4 and 1.5). The total area contains some 2700 plots, spread over 350 hectares (=850 acres). The area lies at app. 10 kilometres/45 minutes to the southwest of the Walled City of Lahore). The main western-style commercial centres are nearer: Liberty Market at 10 minutes. The area is located in the current growth direction of the city. Model Town was an early outpost in the 1930s. New Garden Town was planned when the urban frontier passed. Model Town Extension is a later infilling, on ground left over when the urbanisation wave had long washed over.

Fig. 1.2: Possible study-areas in Lahore.

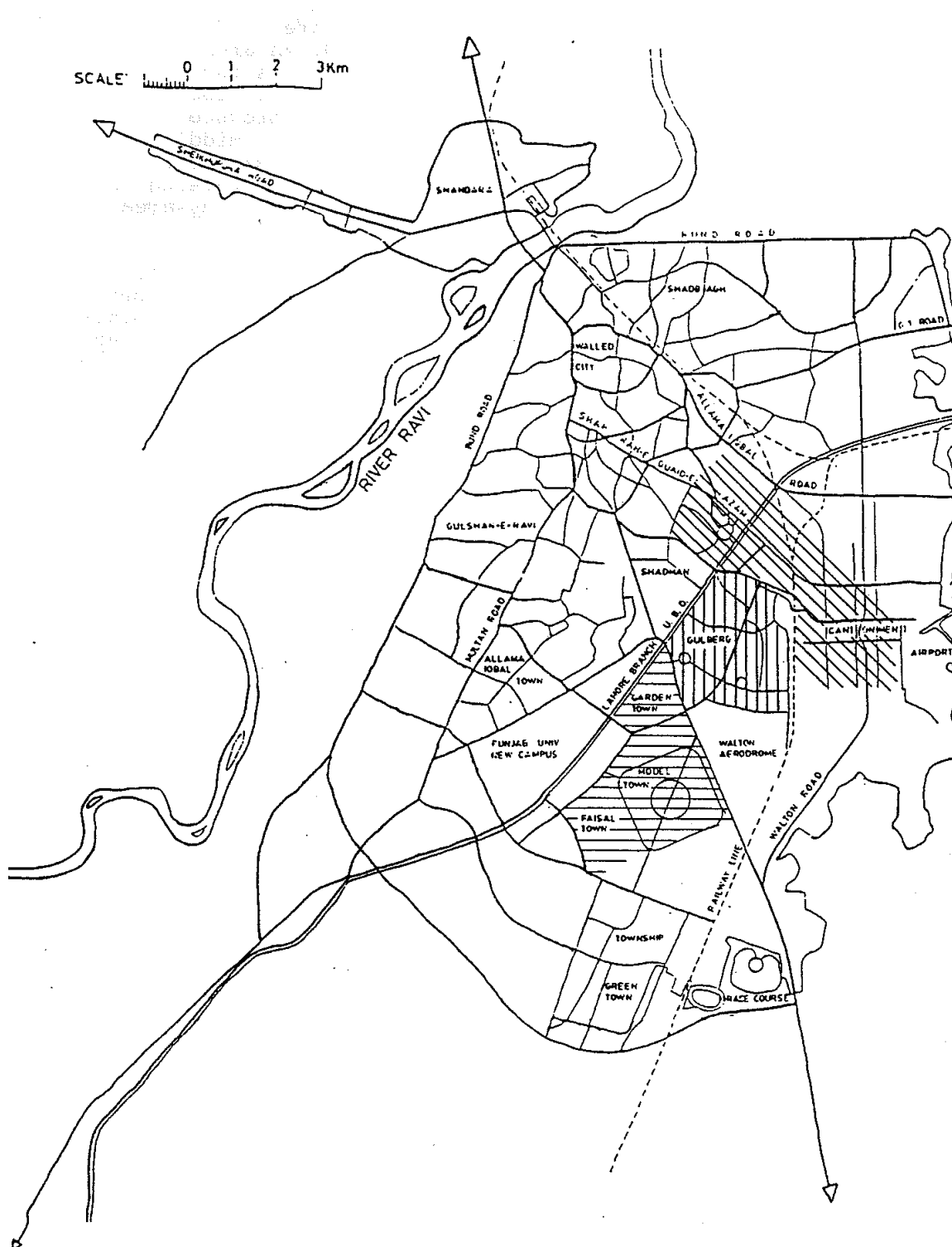


Fig. 1.3: Definitive study-area.



Fig. 1.4: Study-area: divided in blocks.

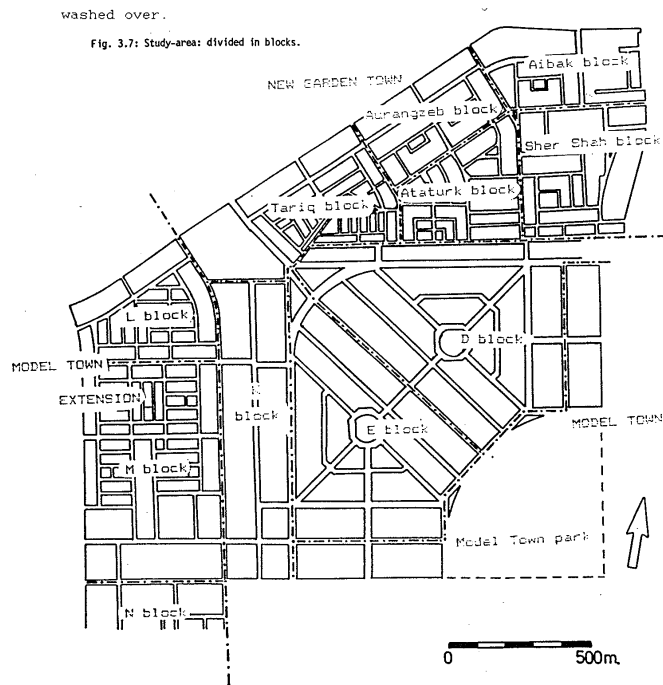
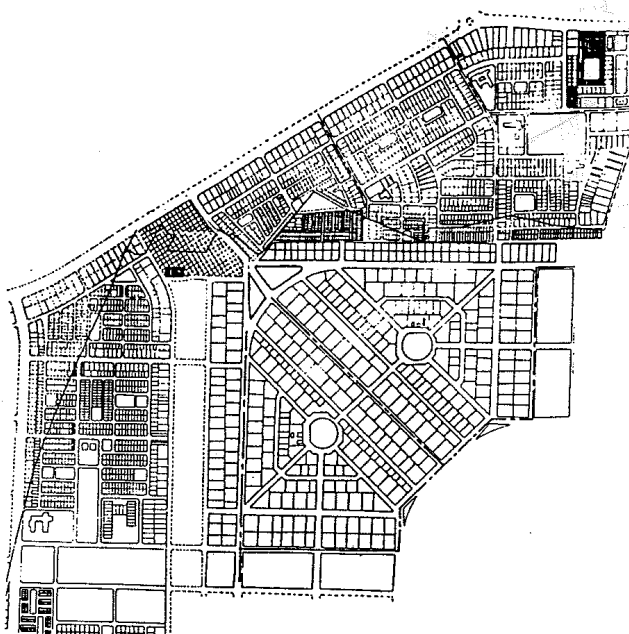


Fig. 1.5: Study-area; divided in plots.



Chapter 2: The planning idiom in Pakistan

2.1 Introduction

It is tempting, but of no use to start this chapter with a long and rather theoretical elaboration on the nature of urban planning. Others have already done so, and sometimes in quite a satisfying way. However a few remarks must be made in this place, to enlighten which of the numerous meanings of planning is used here. Following recommendable texts of e.g. Myrdal, Stretton and Self, it is supposed here that planning is concerned with the deliberate effort to influence people's behaviour in a certain direction to attain certain goals. Urban planning is concerned with the city in its widest meaning. Urban planning is thus used to "furnish" the city (spatially, but possibly also economically, socially or culturally) in such a way that the urban community (or a specific part of it) can benefit from it.

From the total gulf of development philosophies adopted in Pakistan, three mainstreams can be discerned. The first two of these (the "British" and the "Modern" idioms) are "planning" in the strict sense, the third is considered as rather spontaneous, although also deliberate and collective courses of action taken, are recognized in the literature. Each district of the city of Lahore is a blend of the different idioms.³ So they must not be regarded as isolated and exclusive philosophies.

2.2 The British idiom

The roots of the British idiom lay in a mere reaction against the 19th century Megalopolis syndrome. Very large, dirty, dusty, crowded and unhealthy industrial cities had arisen by then. The archetypal example is Manchester, but Bombay, Madras and Calcutta can be mentioned too. One of the spokesmen of the movement was Ebenezer Howard (1850-1928). He published his famous work "Garden Cities of tomorrow" for the first time in 1898, under the title "Tomorrow: A Peaceful Path to Real Reform" (Howard; 1965). The fundamental principle of his creation was that a city is a place of opportunity (economically as well as socially). For this opportunity to be used at its optimum, a city should have an optimal size and location. If it grows too large the opportunities are spoiled. Yet in the countryside, where a happy and healthy environment is available at low costs, no opportunities are present. Therefore a "mixing" is recommendable: a city of fair size should be offered to the people, located in the countryside.

The main aspects of this line of thought can be said to be (Rodin; 1967; p.149):

- 1- Limited size.
- 2- Comprehensive planning to ensure a balanced relationship between e.g. agriculture, industry & services; residences, workplaces, commercial and public facilities; between open and covered spaces in various grades of density.
- 3- Self-containment of the community.
- 4- In the total cluster city public transport is important; on single city scale the pedestrian.
- 5- All this is necessary to create an environment that is healthier, cheaper and more pleasant to live in.

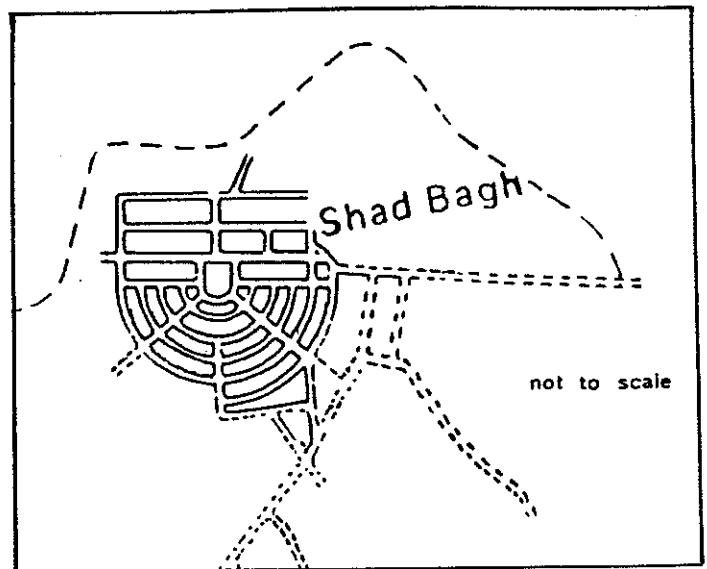
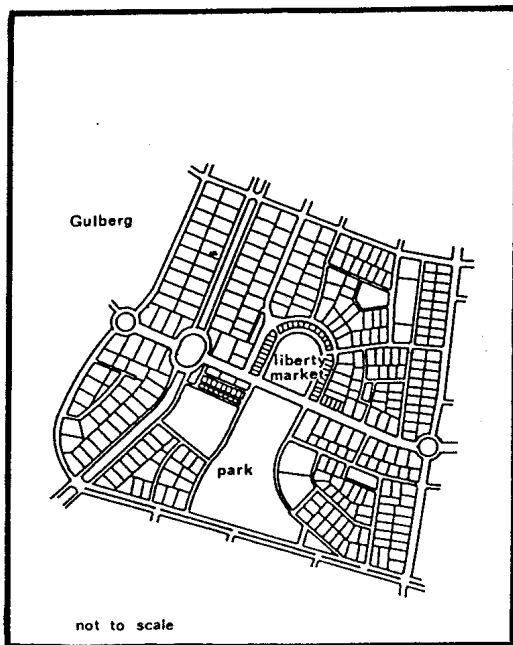
After Howard, Patrick Geddes came to the forefront. Yet the Garden City ideas were eroded by the followers of these two guru's. Ideology was replaced by a "green"-image. So the utter form changed little, while the underlying idea was left behind. Yet garden cities have displayed their popularity all over the world.

Although the idiom arose in theory at the start of the century, in practice it existed already much earlier, at least in British-India. The Civil Lines and the Cantonment were laid out on the same designs, quite in contrast with the indigenous style. They are characterised by wide avenues with trees (the most important of these called "the Mall") and parks, by a wilful separation of land uses, by strived self-containment of districts and by comprehensive planning. So, while namely Letchworth and Welwyn Garden City were honoured as the first examples, it is possible to describe Lahore's Cantonment as "a Garden City built half a century before this concept of planning became popular in England." (Ruddock; 1965; p.111).

In modern times the idiom is predominantly applied on sub-local scale, according to local and temporal features. The main characteristics of residential quarters in Pakistan, based on the British idiom are:

- 1- Comprehensive planning. A balance is striven for between urban elements (houses, roads) and rural elements (open space, greenery, recreational facilities).
- 2- A deliberate and strict separation of land uses.
- 3- A division in more or less self-contained neighbourhoods (blocks), hierarchically grouped around a principal centre.
- 4- They are mainly low density residential districts, with bungalow- type detached dwellings, set in spacious gardens.
- 5- The overall lay-out of the districts is more or less artistic.

Fig. 2.1: Gulberg and Shadbagh; Lahore.



6-
7-
8-

Source: Qadeer, 1983; Mayer, 1979.

The bungalow is the most eye-catching difference with the indigenous neighbourhood. The British developed this specific type of housing in India (a "bungalow" is a "house according to the Bengali style").

Although it is quite unsuitable for the Indian climate the British have always stuck to it (Allen; 1978; p.67-68):

"Equally historic, but of a far simpler architectural design, was the....bungalow....: a very pleasant mud brick bungalow ... standing in wide lawns with huge banyon trees that dropped branches down to the ground. This was the archetypal up-country bungalow ... The pukka bungalow most often found on the large stations was an evolved version of the country bungalow; often a two-storeyed structure, flat-roofed and incorporating arcades with Tuscan columns and round Renaissance-style arches. Variations on these basic themes were limited, so that one knew exactly what sort of accommodation to expect when one moved on transfer".

Nowadays the bungalow has become synonymous with a modern life-style, not in the least because it is only affordable for the rich to live, British-like, in a bungalow. This is not only because of the high cost of land, but also because of increased costs of living. In this way, the bungalow is preserved as an anachronism, as being caviar to the general...

2.3 The modern idiom

The so-called "British" planning idiom, as adopted in Lahore, is quite homogenous. In contrast to this the "modern" idiom is a hotchpotch of planning styles, architectural principles and urban design, in an accelerating succession.

Its starting point can be laid at the principles as contrived, formulated and executed by brilliant architects c.q. urban planners like Le Corbusier ("Ville Radieuse") and Frank Lloyd Wright ("Broadacres"). In Pakistan the idiom gradually came to the forefront after Partition (1947). Mumtaz (1985; p.160) gives a description of its principles, although restricted to the stricter sense of architecture.

... "That is to say-he must reject all pre-conceived forms, precedents and traditions. Being purely based on logic and rationality the new world will be composed of "pure" forms. That is, undiluted, pure, elementary geometric forms, abstract forms, forms that exist in themselves, not dependent on external objects. The new forms thus created will be determined by the logic of "function", they will be designed like machines for efficiency. Better still, they will be produced by machines. They will thus be perfect in their precision, cheap and abundant. Decoration is redundant and must therefore be rejected. Material should be left pure... The structural system must be expressed externally as well as internally."

The main points can be summarized as follows:

- 1- The accent lies on form and function of a building.
- 2- Architecture and urban planning are related.
- 3- Forms or lay-out must be simple, pure and repetitive.
- 4- A strict separation of functions is necessary.
- 5- A lot of open green space in a low density covered area is striven for to make life comfortable, healthy and pleasant.

Doxiadis (1967) stresses in a U.N.-paper that the dominant role of the socio- cultural pattern and the value-system of the people served by a settlement should play a dominating role in the conceptualization and implementation of the plan and the design. Therefore all aspects of human life in a settlement are to be

incorporated in the plan: economic, administrative, technological and aesthetic possibilities and desirabilities. And all these in an integrated way.

A few planning principles can be detected from the forgone:

- 1- Planning should be comprehensive.
- 2- Order and hierarchy are indispensable to make all functions part of a well-co-ordinated system of interdependent activities.
- 3- The neighbourhood is to be the principal scale to develop this order.
- 4- Change should be anticipated in the planned physical form.

Later on this modern planning idiom was influenced by the progress of in particular American planners: the systems approach. The planning process was divided in different steps with evaluation points. These changes were accompanied by a growth in organisation.

In Pakistan, as a Third World country, this growth of the organisational framework was strengthened by autonomous "institution-building habits". The "Improvement Trusts" were superseded by "Development Authorities" with more legal power, a larger area of jurisdiction, a widened range of topics and a greater back-up of financial and manpower resources.

2.4. Evaluation of the different planning doctrines

In a nutshell, it can be stated, that urban planning in Pakistan evolved from the wish to create a healthy and pleasant environment for the upper and middle income groups, (1920s), via large scale comprehensively planned housing schemes (in the 1960s) towards an urban systems control function (nowadays).

In Lahore, Model Town can be seen as the physical exponent of the first stage. New Campus as that of the intermediate stage and the Lahore Urban Development and Traffic Study of 1981 as that of the, up to now, final stage. "City planning practice has evolved from an exercise in beautifying a city to a process for managing its development." (Qadeer; 1983; p.237). Some aspects however are steadfast and return as underlying assumptions of urban planning throughout the years. The most important of these in Lahore are the neighbourhood idea, the accent on comprehensive planning and the position of the upper and middle income groups as target groups.

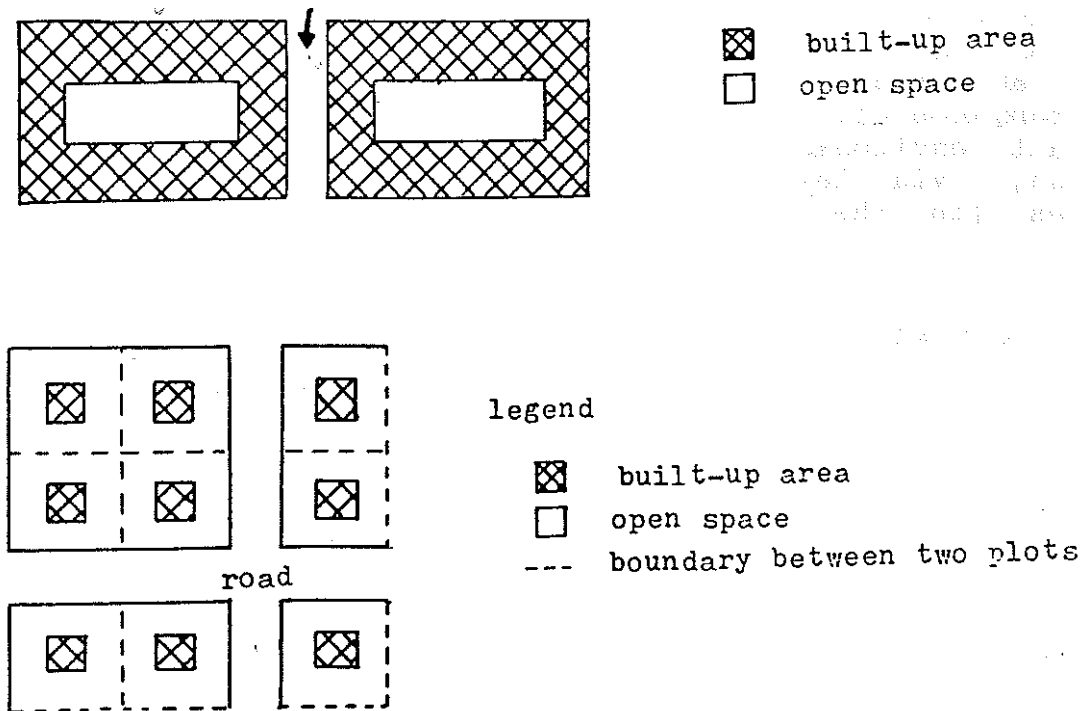
2.5 The indigenous style of urban development

In fact the indigenous way of urban planning as described below cannot be regarded as planning. Indeed it is quite often the opposite. By its very nature it is irregular and unapproved by planning-institutions. In theory it is as different from planning as chalk from cheese, but in reality in the city of Lahore it is in fact far more important in solving the housing problem than the "regular" development activities. For that reason it cannot be omitted from this set of urban development idioms.

The indigenous mainstream consists of 2 different types. The first is the so-called New Indigenous Community (N.I.C.). By 1981 these quarters had spread over almost half of Lahore (Qadeer; 1983; p.182), although official city planning has always stood in its light. Qadeer (1983) is one of the few scholars to recognize the idiom. He calls it the blending of the traditional Lahori life-style (based on preferences for

propinquity, utilitarian mixing of activities and proximity), with modern conceptions (relating to public health, comfort and means of transport). Thereby it uses traditionally evolved adaptations to the climate. These consist of relations between building height, street width and building style; (e.g. completely built-up plots, grouped around a shared courtyard.

Fig. 2.3: New indigenous community & planned scheme; typical lay-out.



It must be emphasized at this point that N.I.C.'s are by no means the residential areas for the low income groups or the riff-raff, and certainly not slum areas. They started to come up when the first generation of indigenous civil-servants chose to live outside the crowded Walled City in more spacious and healthy quarters.

In the evolution of an N.I.C. central control over housing types and building regulations do not exist. At the start no municipal services exist either, but when the complete area has been filled up the Municipal Corporation quite often tries to solve this problem.

After this first offspring as residential quarters for indigenous civil servants a second generation of N.I.C.'s came into being around the 1930s. Distinctive social or religious groups started to develop their own residential quarters. The best example in Lahore is Krishan Nagar, for the Hindu community ("Nagar" means quarter). In this generation space was set aside for parks, schools, temples or mosques etc. In this way a step was set in the direction of more deliberately planned schemes.

Fig. 2.4: Krishan Nagar, Lahore.



Source: Qadeer, 1983.

A third generation of N.I.C.'s arose after Independence. Hindu and Sikh communities had left for India, so the need for religious distinction between different neighbourhoods had diminished. The upper-middle class moved to bungalows in the nearby built planned schemes. The N.I.C.'s thus descended a little in the social ranking. On the other hand the growth of the city was increasing at a sharply accelerating pace, and the housing shortage grew with it. E.g. Bazaar merchants and lower level professionals sought specific residential areas, according to their own social ranking. This specialization occurred among N.I.C.'s. They achieved a specific social image and attracted a specific section of the population.

The second type of the indigenous mainstream of urban development consists of the so-called "Katchi Abadis" ("Katchi"= dissolvable. "Abadi"= settlement) and "Jhuggi Clusters" ("Jhuggi"= hutment). These arise by definition as unplanned, spontaneous settlements. Yet the idiom has grown into a kind of "community planned neighbourhoods". Planned invasions of vacant sites were organised. Also joint actions towards the government were set up. This resulted, be it slowly, in the recognition of the importance of Katchi Abadis as a means of reducing the housing shortage. The emphasis in government policy changed from "slum clearance" to "slum upgrading" and "improvement". In 1978 a separate Katchi Abadi- directorate was set up by Lahore Development Authority. This change in government policy was in fact a (Third) Worldwide phenomenon. The "Slums of Hope" ideas (Lloyd; 1979) about the positive effects of squatter settlements became widely accepted, and even a panacea. In reality however time and again Katchi Abadi's are dissolved. An article in "Viewpoint" on the destruction of Kuthluthi Katchi Abadi at Sheikhpura ends with: "Who will convince the uprooted of Kuthluthi that the "Katchi Abadis" have been regularized?" (Viewpoint XII-19 (December 18; 1986) p.21). That it is still a matter of balance of political power between the Katchi Abadi residents and other parties concerned, whether a settlement will be destroyed or upgraded, may be taken for granted. In this balancing process often "the law takes the side of the powerful". (Viewpoint XII-19 (December 18; 1986) p.21)

In Lahore in 1981 nearly one quarter of the total population (i.e. ca. 750.000 people) lived in Katchi Abadis, and this figure will certainly not have fallen since then. Of these a majority (ca 78%) consists of labourers, craftsmen, hawkers and a sizeable minority (ca 25%) of white-collar employees and superiors (including

e.g. primary school teachers, clerks and police constables) (Qadeer; 1983; p.191; Qadeer & Sattar Sikander; 1978; p.173). Thus clearly NIC and Katchi Abadi are suited surprisingly well to the need of the man on the Clapham omnibus. The size of individual Katchi Abadis can vary from just one or a few huts to a few hundred huts with some thousand inhabitants. They can be located in every part of the city, wherever there is a track of land available and some employment nearby, but they have the "tendency to spring up around hearths of luxury." (Viewpoint XII-16 (November 27; 1986) p.20).

Chapter 3: The planned development of Lahore

3.1 Lahore improvement trust

The Lahore Improvement Trust (LIT) was the forerunner of LDA, set up in 1936, with a view primarily "to prevent haphazard building operations which the Municipal Agency had apparently found itself unable to control."⁴ It had a small back-up, financially as well as in quantitative and qualitative aspects of manpower.

LIT was a statutory, non-elective body, set up by the Municipal Corporation. In this way urban planning was handed over to professionals and bureaucrats. The main activity of LIT consisted of the development of land, for residential purposes. The schemes developed were obviously meant for the higher income groups.

LIT completed in its history a total number of 8469 plots, of which 58% were meant for the "high income group" (earning more than RS 50.000 yearly, price level 1981 ;). This income group comprises only 3% of the total population. A further 31% percent of the plots were within reach of the "middle income group" (earning between 20 and 50 thousand Rupees annually). Together these groups account for 17% of the population. Conclusive: 89% of the number of plots were within reach of 17% of the population. In the program of LIT only the development of new housing schemes was included, not the functioning of the metropolis.

3.2 Lahore Development Authority

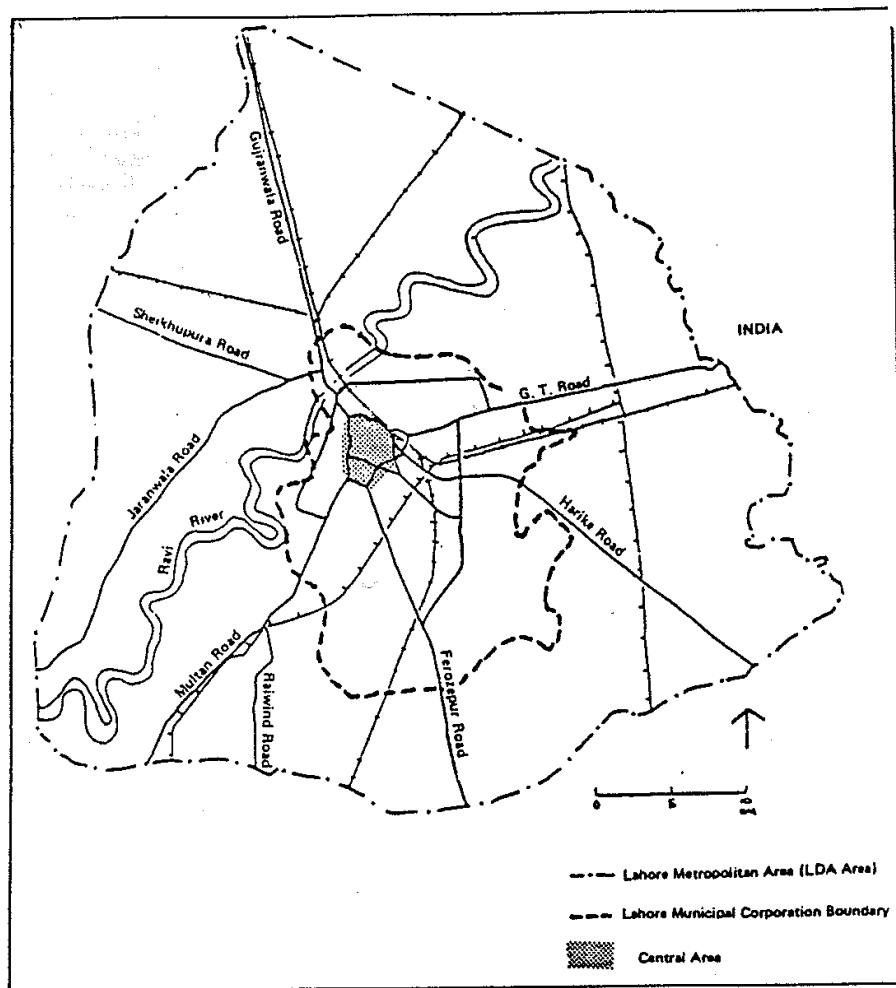
Lahore Development Authority was established in 1975, under the first Bhutto-government, replacing LIT. It was given a larger financial back ground and more judicial power and was manned with (supposedly) new brooms. According to the LDA-act of 1975 the main purpose and functions of LDA are the following:

1. The preparation and guidance of the comprehensively planned development of Lahore.
2. The preparation, updating and implementation of a Metropolitan Development Plan.
3. The development, operation and maintenance of water supply, sewerage and drainage systems. For this purpose a separate agency, the Water And Sanitation Agency (WASA) was set up.
4. To exercise planning-control and building regulations.
5. To prepare, implement and enforce schemes for environmental improvements, housing, urban renewal (including slum improvement and redevelopment), solid waste disposal, transportation and traffic, health and educational facilities and preservation of objects or places of historical, archaeological, scientific, cultural and recreational importance.

The area of jurisdiction of LDA covers the so-called Lahore Metropolitan Area, with a total area of 1760 km², including 400 km² under the Lahore Municipal Corporation and 90 km² under the Lahore Cantonment Board.

The activities of Lahore Development Authority are according to its functions as stated above. Most striking are the development of new residential schemes and the town planning activities. In the first 5 years of its existence Lahore Development Authority has developed approximately 55.000 plots, of which 15.500 together with LIT. Substitution of LIT by Lahore Development Authority has thus resulted in a much higher figure of developed plots. Yet, this figure is still far less than the actual demand.

Fig. 3.1: Lahore Metropolitan Area.



Source: LUDTS, 1981;

The identification of projects is largely on ad hoc basis. Pressure from influential groups or the press could well be the more important factors. Reference to the Master Plan of 1966 is not made at all. After identification of the area, the project of land development takes place in three separate steps:

- 1- Preliminary activities. Identification and location could also be included in this phase. The lay-out of the new scheme is prepared by the Town Planner of Lahore Development Authority.
- 2- In the second phase the land must be acquired. This is a very difficult and time consuming process. At this stage of the development the basic services (water, electricity, gas, sewerage etc.) must be built too. Lack of coordination between the different delivering agencies causes much delay. "The agencies responsible for different services, such as gas, water and electricity seem to come in one after the other with large gaps in time accountable to either lack of budget, provisions or lack of coordination." (LUDTS; 1981; p.79).

3-The third phase consists of the finalisation of land acquisition, of the transfer of plots and of recovery. The allotment of plots can take place in three different ways:⁵

- a. By means of exemption. Former land owners, from whom land was acquired to develop a new scheme, can claim a certain area of developed land in the scheme.
- b. By means of allotment: A specific percentage of the total number of developed plots is reserved for certain categories of the population. The governor of the Punjab has the right to allot these plots to individuals.
- c. By means of an auction. Three or four auctions are held by the Lahore Development Authority each month. All participants in auction- proceedings have to deposit a draft of RS 5.000 (= app. f.700,--) to qualify to bid.

To give a crude indication of the time it can take for a scheme planned by Lahore Development Authority to near completion: phase 1 (preliminary activities) can take up to 2½ years. The second phase (completion up to a reasonable degree) can be estimated to last approximately 3 years. So the minimum time required to complete a project is five years. In the older schemes of Lahore (e.g. Shadman, Samanabad) it can be seen that a scheme almost never reaches total completion. By the time the last empty plots are filled up the oldest buildings have already fallen down again! The reasons for this long time span to complete a scheme are both external to Lahore Development Authority (lack of coordination between various government or private agencies; difficult and time consuming land acquisition procedures) and internal: case-to-case handling of projects takes a lot of time, the management has few means to control the work done by the various agencies, the organisation is housed in several different offices in the city, etc.

Another activity of Lahore Development Authority is controlling building regulations. Not only aspects as maximum covered area or maximum building height are under control, but also the time span for completion of a structure. This may take only 2 years, starting from the acquisition of the plot. In case of violation of these regulations penalties are imposed (fees or the resign of allotment.) The Town Planner of Lahore Development Authority must issue a so-called "Completion Certificate" after a building is erected and approved. Subsequent sales are only allowed with permission of Lahore Development Authority.

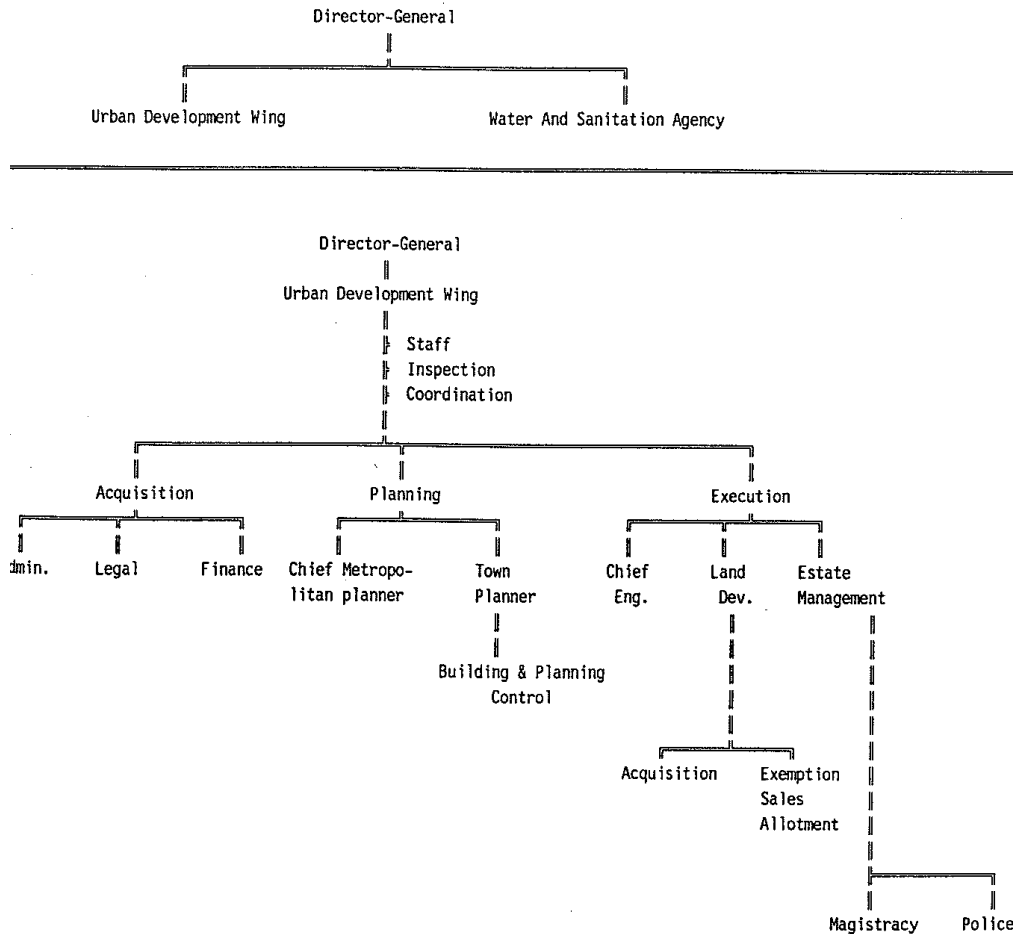
The above can be called the most important activities of Lahore Development Authority in the framework of this thesis. Some other tasks need mentioning too.

Growing in importance is the control that LDA exercises upon private schemes. Due to the rapid growth of population and the shortage of financial resources and will of the government to develop plots and provide services in a fast enough rate, land values have increased (a matter of demand and supply). Thus it has become profitable for the private sector to subdivide vacant or agricultural land and provide roads and services, and/or to provide ready built apartments and townhouses. A common feature of these private projects is that they are meant for the upper strata of the society.⁶ Possibly in the future the middle strata will be detected as a profitable target group in Lahore, as has already been the case in Karachi (Korangi-scheme). In Karachi the history of private development of housing schemes started much earlier than in Lahore. Here it became of some importance only in the 1980s.

The activities of the semi-private sector are also growing in importance. People with a common interest (e.g. employees of PIA or WAPDA) and with enough political influence can erect a cooperative housing society and press the government to be given some track of land. They can perform the necessary

development and subdividing activities and hand it over to the LMC to take care of the maintenance. In the future these (semi-)private activities will certainly grow in importance, as the pressure of urbanization will continue.

Fig. 3.2: Outline organisation Lahore Development Authority



Source: LUDTS; 1981 (modified).

Before a private or semi-private housing society can start its work it must gain permission to do so, from Lahore Development Authority. This demands certain specific characteristics:

1. Is the scheme in accordance with the Master Plan at hand?
2. What is the location of the proposed scheme in relation to the existing infrastructure?
3. Could the location of the scheme cause any problems (waterlogging, flooding etc.)?
4. Does any conflict of ownership over the land perpetuate?
5. Does the overall-planning of the scheme "fulfil all the basic requirements of town planning, e.g. there must be proper place for streets, roads, recreational places, graveyards, commercial plots etc." (Kaukab; 1983).⁷

When the basic plan meets these demands it is ready for the further process of approval. The detailed map of the schemes is scrutinized by Lahore Development Authority. After this the scheme can officially start. LDA takes possession of 20% of the plots to be developed as a bail. In case the developing society or

person is not able to finish the project Lahore Development Authority will do so at the cost of these plots. Up to 1984 22 private schemes were approved by Lahore Development Authority, four of which larger than 1000 kanals (approximately 100 acres or 40 hectares; as a comparison: the complete New Garden Town Scheme covers an area of 556 acres).

Of the other tasks of Lahore Development Authority it is sufficient at this moment to mention the drawing of Master Plans (and smaller scale plans), the "beautification of the city" and traffic improvement.

The Lahore Development Authority is an autonomous body under the Secretary, Housing and Physical Planning Department.⁸ (So in fact it is a provincial organisation performing the local planning and development task!) The Authority is split into a development section and the "Water and Sanitation Agency" (WASA). The first section consists of 8 different wings, headed by one Director-General.

3.3 Housing and Physical Planning Department

This Department, often abbreviated to HPPD, performs the planning task on the regional level. Yet it is linked to the local level in 3 ways:

- 1- Via the Lahore Development Authority, being an autonomous body under HPPD (see paragraph 3.2).
- 2- Via the development of schemes on the local level. The schemes are more or less treated by LDA as ordinary semi-private schemes.
- 3- As the agency that drew up the 1966 Master Plan for Lahore (see paragraph 3.5).

3.4 The Model Town Society

The Cooperative Model Town Society (or MTS) is the only agency in this sequence that performs both a planning & development task and a maintenance task. Maintenance and upgrading of roads, parks, playgrounds and public buildings, provision of services (water, electricity). Only special projects (Model Town Park) require planning activities.

The Society was erected in 1924. The objective then was the development and construction of a garden city. This had, according to the ideas of e.g. Ebenezer Howard, to take place on agricultural or waste land, out of, but within easy reach of the city of Lahore. Model Town was originally proposed for the middle income groups, who could not afford to live in the existing planned areas (Civil Lines, Mayo Gardens etc.), but could well imagine the unhealthiness, congestion and "exorbitant high cost of living" in the city of Lahore.

"It is chiefly the middle class men whose incomes are fixed and limited, and who by their better training, education and social position desire to live a better life that are the chief sufferers."(Chand; 1930; p.4).

Financially the Model Town Society is intended to be completely self- sufficient. Residents do not have to pay housing tax to the government, but instead pay property tax to the Society. It is also paid for the services it provides (energy, water, electricity, hospital, mosques, the Hussaini Trust (orphans and widows), chowkidar,⁹ sewerage and conservancy). Another source of money is the membership fee for every landowner. There above every member must purchase at least one share of the Society. On this share no dividend will be paid. All profits are spent on the improvement and maintenance of public services.

All owners of property in Model Town, (property can be a building or a plot) are per definition members of the Society. By this they have the right to participate in the three-yearly elections. Each block then chooses two representatives and the President of the Society by direct voting. The number of voters has risen from 800 in 1962 to over 3000 nowadays.

The organisation of the Model Town Society is split into several departments. The more important of these are the Public Works Department, which takes care of water supply, horticulture and the maintenance of roads, the Public Health Department, the Education Department and the Transport Department. The latter runs its own buses, numbering 17, leading from Model Town to the Ravi Pull and to the Railway Station.

The organisation changed twice in history. It was erected in 1924 as an independent cooperative society. After Partition, in '47, it became a government agency. Because the majority of the population had consisted of Hindu's and Sikhs, the government could then confiscate many vacated properties. It was not an easy task to allot these plots and buildings to newcomers again¹⁰ (it took 15 years to finish this job completely.) In '62 it returned to its former state and regained independence. In reality the boot is quite on the other foot. Lahore Development Authority seems to have an important finger in the pie nowadays.¹¹ It has appointed a commissioner as administrator of the Society. It had to do so because the government feared that the Society could have problems in spending the amount of money (approx. 14.5 million rupees) it was paid by the Lahore Development Authority, for the sale of tracts of land on the outskirts of Model Town, now forming the Model Town Extension scheme. With the money this sale has yielded roads were repaired and the Central Park was constructed (area: 1005 kanals). In this way in a few years' time, the image of the locality has changed considerably.

The Society uses its own building regulations.

3.5 The Master Plan (1966) of Lahore.

The history of "master-planning" in Lahore has started already in 1951, when a first plan was produced.¹² It proved impossible to recover this plan. For that reason it is omitted from this chapter.

Between 1963 and 1965 the Provincial Town Planning Department prepared the "1966 Master Plan." It was a local effort, written by two professional planners, guided by some geographers¹³ and sociologists. The most remarkable feature of this plan is that it took 2 years to draw the plan and no less than 7 to formally approve it. It is understandable that in a dynamic city like Lahore, the plan was totally outdated by the time it was approved. So immediately after approval a "governors working group" was installed to review the plan. Some updates and modifications were indeed carried through, but the working group never completely finished its job.

The Master Plan of Lahore was the first of a series of Master Plans for cities in the Punjab, prepared by the Housing & Physical Planning Department of the Government of the Punjab. In all these plans a standardized procedure was used:

- 1- A base map of the urban region was prepared.
- 2- A survey was carried out of this region, on the topics of:
 - "geography" (i.e. physical characteristics)
 - socio-economics
 - land use

- 3- The collected data were analysed.
- 4- Existing problems and future development were determined.
- 5- The requirements of different sectors and the possible future development plans were formulated.
- 6- A special "coordination committee" (in which several sectorial agencies were represented) was informed and consulted.

After these steps had been taken the plan could be sent to the provincial government for final approval.

This specific planning process of the HPPD is very well reflected in the contents of the 1966-plan. It is divided into two parts:

Part one is called: "Survey and analysis". In a total number of 70 pages almost all thinkable topics in the range of physical geography, history, population and housing are surveyed and analysed.

Part two contains 66 pages of "planning standards and proposals". It consists of a section on land use planning and zoning (44 pages). A second section deals with the implementation and administration of the plan (10 pages). A last section of 12 pages gives the detailed regulations of zoning and subdivision.

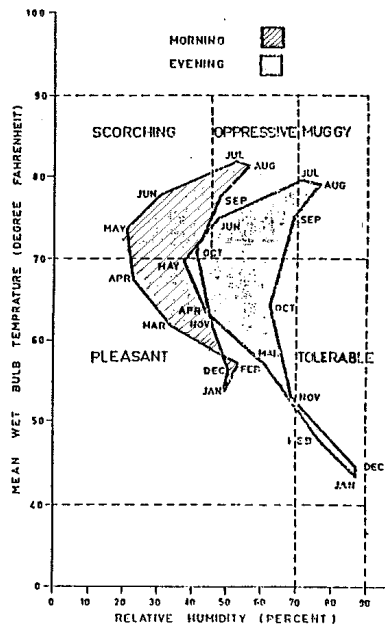
The above is symptomatic of the main characteristics of the plan:

1. It contains a large amount of very detailed surveys, data, analyses, maps, figures and tables. If anything can be called a blow-by-blow description, it certainly is this plan.
2. The accent lies heavily on physical planning. The plan gives an outline of future growth directions, and the existing form and shape of the city. No attention is paid to the working of the urban system. It is a static, pictorial plan.
3. The physical planning is based on the idea of the "neighbourhood", with self-contained cities and schemes (and terms).
4. The Master Plan (1966) is a comprehensive plan, but it cannot be called comprehensive planning. About all kinds of subjects at least some thing is said, but all is planned via the mechanism of land use zoning.

Some other aspects of the plan must be mentioned too.

1. No redevelopment would take place. The uplift of the actual housing shortage was of greater importance.
2. Attention was paid to phasing of the plan and to administrative aspects. Unfortunately phasing was used only to distinguish between different development programmes. Administration was treated as a static phenomenon. No attention was given to the implementation and coordination process.
3. The plan was meant to cover a very long time-span (25-30 years) and was very ambitious. Proposals like that of a circular railway to diminish the problems in the public transport sector seem quite irrelevant, not the least in a Third World city,¹⁴ where people cannot yet afford to put many quite useless programs into action.

Fig. 3.3: Climograph.



Source: Master Plan; 1973.

3.6 Lahore Urban Development and Traffic Study

Right after the establishment of Lahore Development Authority in 1975 work was started on a new master plan. Had the Master Plan (1966) been a completely local effort, this new structure plan (abbreviated to LUDTS), was internationally induced and guided.¹⁵ Even today a daily clustering of foreign experts can be seen to take place in several Lahore Development Authority offices. From this, two contradictory consequences stem:

1. City planning in Lahore jumped at once to "modern" and up-to-date conceptions and rhetoric.
2. But it also became fully integrated in the ever growing network of dependency-relations with other countries.

In this chapter the first point is the more important. The LUDTS is to be considered as a policy-document (LUDTS; 1981; p.XXI). It gives the broad guidelines for the future development of Lahore.

LUDTS consists of 5 volumes, together comprising approximately 1000 pages! In volume 1A and 1B the urban development and the concrete structure plan are presented. The other volumes are on a special study on traffic, on the expansion programme in the northern areas of the city and on the Walled City upgrading project.

The preface deals with the scope and methodology of the plan. These are based on the modern ideas of process planning, in which the time component plays a central role. The plan is set up in a flexible way, with both built-in possibilities for change and fixed evaluation moments. Because of the recognized dynamics of growth, it is a plan with clearly defined main objectives. In this manner it can form the framework for detailed local plans.

The area of jurisdiction of LUDTS is the so-called Lahore Metropolitan Area. This area fits in with the area of jurisdiction of Lahore Development Authority (see figure 3.1).

Part II of the plan describes the context of urban planning and development in Lahore. In contrast with the Master Plan (1966) only the context insofar as it is important for city planning, is described. It is divided in subjects as "population", "sewerage" and "transport and traffic". The functioning of the city takes a central position in this context. The study is critical about the context, also of the LDA itself. The time period of the plan is 20 years, up to 2001. An immediate action programme for the first 5 years is included.

After this "survey and analysis" part, the plan-sec comes to the forefront.¹⁶ Part III deals with the concrete structure plan. It identifies two key factors delimiting the possibilities of urban planning in Lahore: population growth and limited resources.

From these aspects the conclusion can be drawn that the main task of physical planning will continue to be the guidance of the expansion of the city. This includes the provision of housing, the generation of employment, the upgrading of poorly served neighbourhoods and the densification of the urban area. For the realization of these objectives, policies and concrete strategies have been defined. These provide the necessary framework for concrete measures.

As far as urban expansion is concerned an investigation of the possibilities of future growth on the Westside of river Ravi is considered. At this very moment however the only choice remains to have a continued growth in a southerly direction.

The underlying planning idea is that of development in "Mohallas" (neighbourhoods).¹⁷ These would have a size of approximately 1 kilometre in diameter, and 6.000-20.000 inhabitants.¹⁸ Each mohalla must have a focus, - an easily recognizable centre, marked already at the initial stage by such facilities as a mosque or a High School. Thereby each mohalla will have an "area of opportunity". These will give each its own special character.

The map on which the location of all mohalla's is given (fig. 3.4) is "drawn diagrammatically and subject to change". This in contrast to the Master Plan of 1966.

Not only in new schemes but also in older areas of the city residential densities were to be much higher than nowadays. Densities up to 300 persons per hectare are striven for, compared to the figure of 80 for e.g. Model Town. In the existing urban areas this should take place by filling in. The accent in land policies will be on political changes. No further standardisation will take place.

In housing policies two changes are striking. The first is the use of "fresh concepts" of physical planning and lay-out design (LUDTS; 1981; p.XXIV). (Which fresh concepts is not explicitly made clear however.) A second change is the switch to (real) lower income groups.

This must be done by means of:

- 1- A further reduction of plot size.
- 2- A reduction of the level of services.
- 3- The promotion of "informal" or "popular" housing.¹⁹
- 4- A sharp increase in the number of plots. In 1986 the target-figure was 20.000 new plots, compared to 6.000 achieved in 1979.
- 5- Attention to be paid to social infrastructure.

STRUCTURE PLAN FOR LAHORE

SCALE: 0 1 2 3 Km

LEGEND

DEVELOPMENT DURING:

- 1 1981 - 85
- 2 1985 - 90
- 3 1990 - 95
- 4 1995 - 2000

REGIONAL CENTRE

AREA OF OPPORTUNITY

MOHALLAH CENTRE

WALLED CITY

DEVELOPED AREA (EXISTING)

Source: LUOTS, 1981.

A separate part²⁰ of the structure plan is a 5-year investment programme. This is the first concrete action plan, based on the structure plan itself. The implementation of the investment programme is treated too. Remains the question of the implementation of the Structure Plan itself. Although this was an important topic for the writers of the document, Qadeer (1983)²¹ discerned that:

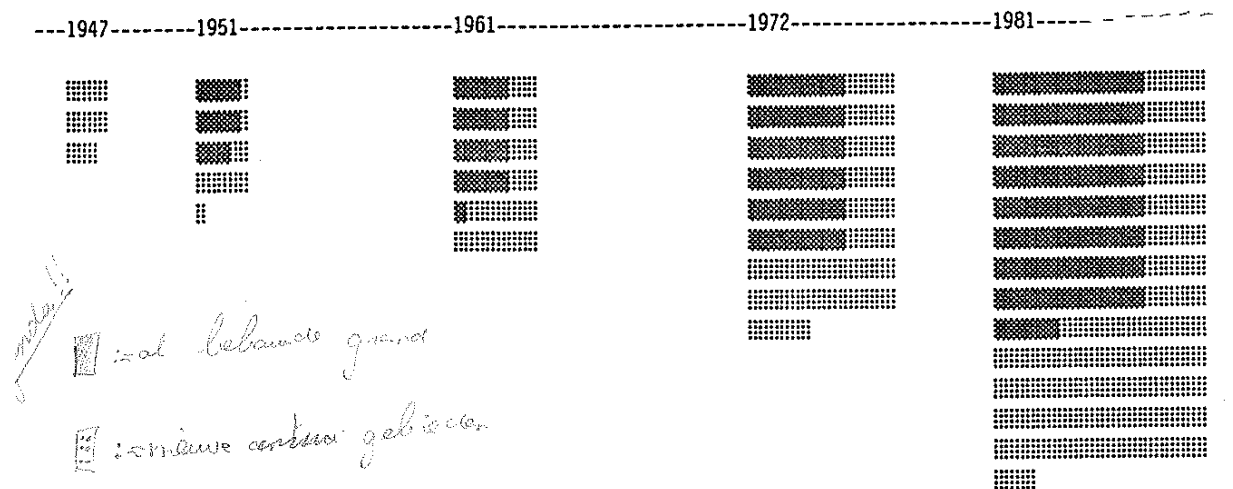
"Implementation of the Structure plan has already begun to reveal the characteristic pattern of Lahore's development, i.e. that only those proposals were getting to the programme stage which entailed capital works and expansion of bureaucratic empires or enhanced official powers, or served the interests of the influential." Qadeer's view is supported by others, among whom Qutub.²²

In conclusion it can be said that the LUDTS is clearly more up-to-date than the Master Plan was. It bears all the characteristics of a modern structure plan. It is flexible, based on the incremental planning style and pays definite attention to the functioning of both city and city planning. All this it performs by means of a critical overview of the past performance: both the development of the city in time (revealing an increasing housing shortage, the lack of basic facilities and a continued growth of the city), and the failures of city planning since Partition. Analysis of these phenomena brings the writers of the plan to blame, at least partly, the organisational framework of urban planning for this meagre performance.

3.7 Land acquisition

In the light of the enormous areal expansion of Lahore (the average growth-rate/year= 7 km²; Kaukab; 1983) the acquisition of land to be developed is a major constraint for Lahore Development Authority. Not only are the financial costs of eminent importance, but also the time-consumption and the political, social and ethical repercussions.

Fig. 3.5: Space consumption of Lahore.



Dark: already built-up area; grey: newly developed area

Source: Kaukab; 1983.

In the land acquisition procedure a certain balance between the power of the buyer (=Lahore Development Authority) and of the seller (a villager or landlord²³) is brought about. The decision which side should be the more important is a political decision. This decision is based on considerations of social, ethical, economical and institutional character. From time to time the relative priorities have changed and so procedures were changed too.

The first land acquisition act dates from 1894. Under this act a compensatory amount of money had to be paid, based on the market value of the land. It was a lengthy procedure if not all parties were cooperative.

In 1973 the act was changed. The buying agency (i.e. Lahore Development Authority) now had to pay a fixed price,²⁴ far below the market rate.

Compensatory the seller had the right of exemption. (In return for the sale he could get back a certain amount (e.g. 30%) of the sold land bounded to certain limits against paying the development costs.) Another change was the obligation for landowners to sell land for defence and residential purposes.

This process, in which land was acquired against under-market rates from one group of people and sold for good money to another, just had to provoke resistance. This resistance found a way out both officially and unofficially.

- Officially. Landlords who had gained influence after the change of government in 1978 protested against a law that deprived them of land against little money.
- Unofficially. Landowners started to divide their parcels into many more, registered separately on the names of family members and friends. So they succeeded in recovering the 30% of exempted lands, by dodging the maximum amount (often a 1 kanal plot). This resulted in some places in the strange fact that more plots had to be exempted than could be allotted! These protests against the 1973 act resulted in returning to the older act. In 1986 Lahore Development Authority was made to pay the market price again and original owners were given more opportunities to debate the sale. According to the Lahore Development Authority town planner, the new act is fair, although the situation for Lahore Development Authority is more difficult now, than before.

Three types of problems arise out of this land acquisition-procedure:

1. It involves high costs, both in time and money. This is one of the major constraints for the development of planned schemes. This is caused both by legal factors (people going to court and debating the procedure) and by administrative factors (who owns what?). This brought the writers of LUDTS (1981, p.82) to sigh: "The procedural constraints are responsible for a number of delays. But since they mostly represent Government procedures little changes can be expected."
2. During the time of acquisition the land in question becomes part of the "minor urban fringe" (Farhat Gulzar; 1976). Here all possible changes can take place, for example in ownership structure (causing speculation). Also Katchi Abadis or other illegal land uses can develop.
3. Because choices have to be made about justice (for the individual or for the "community") politics get involved.

It seems logical to deal with land values now, after this elaboration on land acquisition. This is difficult however, because of the existence of two layers of land values: an informal and a formal. To receive information about formal land values is no problem, these are well registered. The real prices paid however can vary very much from these registered figures. Paradoxically both to the positive and to the negative. To the "plus" e.g. to whiten black money, to the minus to dodge taxes. It seems best to omit the official data completely to avoid unfair pretensions. For this study three sources of unofficial data are by hand. Qadeer (1983) gives data obtained by interviews with real estate brokers. The authors of the study have done the same, in a part of the city. Qutub has obtained data all over the country.²⁵ "Even Lahore's planners relied on interviews with brokers to compile maps of land value-contours of the city." (Qadeer; 1983; p.228).

The overall picture for the whole city that arises gives a clear cut peak at the Walled City. Prices up to RS 6 million per kanal have to be paid here for developed land. The commercial centre of Anarkali also takes fabulous prices. A "ridge" of high prices then extends via the former "Civil Lines" and Shadman to Gulberg and the Cantonment. Paradoxically in these areas also the larger plots are found! In the in-between areas prices are considerably lower, but still nowhere below the figure of RS 50.000 per kanal. This means that a track of land of 3 Marlas (considered to be the smallest habitable unit) costs at least RS 7.000! Even undeveloped land on the outskirts costs RS 10.000 a kanal.

These prices are not so important in absolute sense, but even the more in relative. When compared to the distribution of household incomes it becomes clear that up to three quarters of the population are excluded from even the smallest plots!

Table 3.1: Income distribution in Lahore, 1962.

Percentage of households	30%	30%	22%	10%	6%	2%
Annual income (Rupees)	< 5,000	5,000-10,000	10,000-20,000	20,000-30,000	30,000-50,000	> 50,000

Source: LUDTS, 1983.

The above described spatial distribution of land values also gives an indication of the temporal evolution of land values in planned schemes. Both Qadeer (1983) and a survey of brokers by the authors gives the same idea. In the first stage of a scheme, thus when a specific site is appointed as a future scheme, a sharp increase of land values is encountered. This increase continues in the second stage when the filling up of a scheme takes place. In the third stage the scheme is (nearly) completed and the land value curve starts tapering.

It must be kept in mind that although all planned schemes show, or have shown, this pattern the absolute figures of the land value can vary considerably between schemes. Three factors play a key role in this:

1. The increase of absolute land values through time. So the older a scheme the cheaper the price per areal unit.
2. The reduction of plot size through time. So the newer the scheme the cheaper the price per plot.
3. The location of the scheme. The newer the scheme the further away from the traditional centres of the city. (Yet the city purposely or not, does develop new centres. So the centre of "westernism" has changed from the Upper Mall, to Gulberg central market and from there to Gulberg Liberty. It seems logical to assume that in the future the centre will move even further away.)

The overall outcome is that the land value of a certain scheme is determined both by the cost of development and by the "image" of the scheme (defined by e.g. location, plot-size, facilities, congestion etc.).

Fig. 3.6: Planned scheme lifecycle.

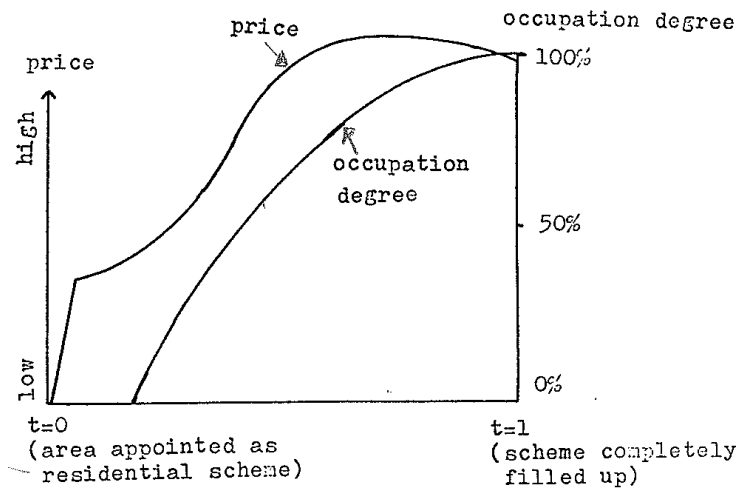
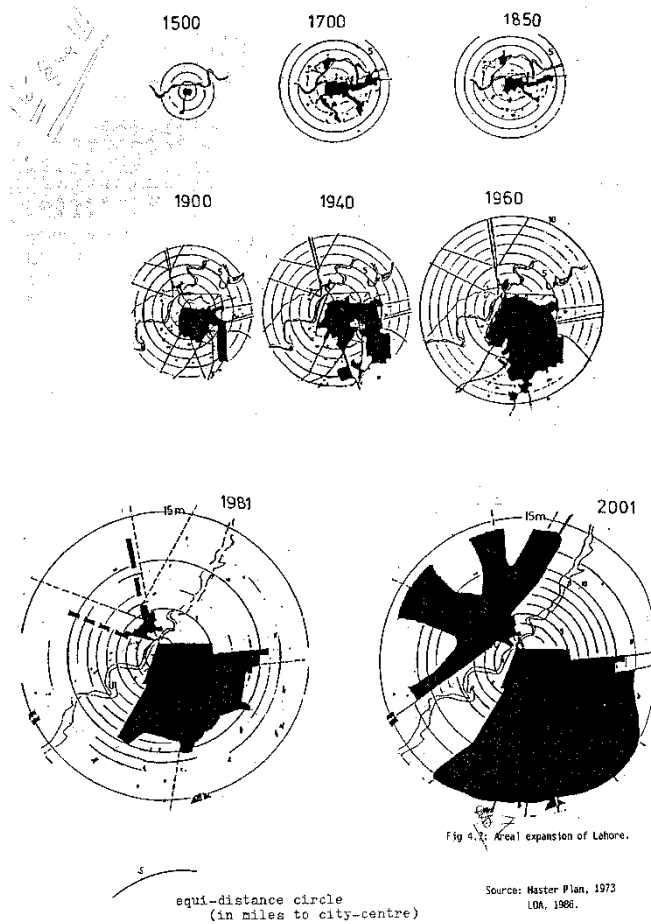


Fig 3.7: Areal expansion of Lahore



Source: Master Plan, 1973; LDA, 1986.

Chapter 4: The result of the planned activities

4.1 The record of planned schemes

At first glance both institutions, directly concerned with the development of new residential schemes in Lahore, LIT and LDA have quite an impressive record. Table 4.1 gives an overall view of the absolute number of plots developed.

Table 4.1: Development of plot size (in percentages)

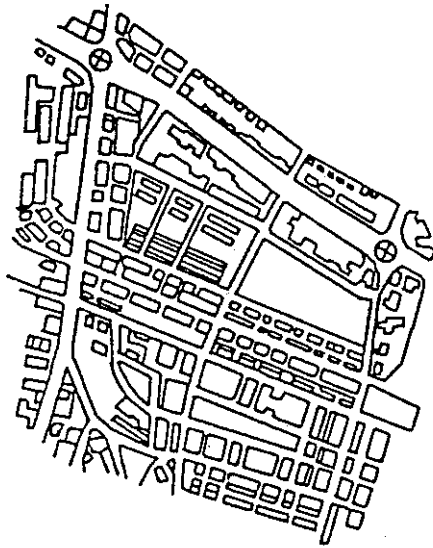
Scheme/period Plot size	LIT	LIT/LDA 1975	LDA 1975- 1979	LDA under dev.	LDA up to Dec 1983	New Garden Town	Model Town Extension
5 Marlas	11	26	19	29	28	32	35
7 Marlas	4	8	11	8	41	4	8
10 Marlas	27	42	62	31		13	52
1 kanal	19	7	7	29	31	19	5
2 kanals	13	5	0.4	3		16	0.1
4 kanals	15	2				12	
6 kanals	3	1				4	
8 kanals	8	0.3					

Source: LUDTS, 1981; PC-1 (MTE and NGT); Kaukab (1983); plan New Garden Town.

The history of planned urban development in Lahore started under the Raj, with schemes as the Railway colonies, Mayo-gardens, Model Town (1924) and Shadbagh (1930s). A fresh start was made in 1949 with the redevelopment of a part of the Walled City. In the Shah Alami-market many houses were burnt down in the ferocious riots of 1947 and many house owners had moved to India.

"Before the independence of Pakistan Shahalami was the most congested part of the Walled City.Buildings were multi-storeyed and sunlight could not reach the ground." (Kaukab; 1983; p.50).²⁶ The project aimed at two things: to enable more commercial activities and to provide open space. The first goal was certainly reached. It is true that more open space is created - the original main street of 15 feet wide (=4.5 m) was transformed to a new 80 feet (= 24 m) dual carriage way with a 15 feet central green strip. Most of this newly created space however, is taken into use by shopkeepers, hawkers and vendors and converted into a busy small scale commercial centre. The first newly developed scheme after Partition was Samanabad in 1950. The only objective of this scheme was to solve (part of) the enormous housing problem, brought about by the influx of immigrants. It was meant for low and middle income groups. For refugees prices were fixed at Rs 30000.

Fig. 4.1: Samanabad.



Source: Qadeer, 1983.

After Samanabad another project was started (around '52): Gulberg. It also aimed at decreasing the housing shortage, but was explicitly meant for the upper income groups.²⁷ Ironically enough it was necessary for LIT to subsidize the plots. At that time the scheme did not have any attractions and was considered to be too far off the city-centre. Obviously for these target groups no housing shortage existed! At the moment however Gulberg is very much in demand and thus very expensive. It consists of 6 parts with a total area of 1418 acres (=575 ha). All parts are based on the British planning idiom. Most striking aspect is the Main Boulevard, a 200 feet wide dual carriage way, flanked by greenery and passing not only 2 fountains, but also the centre of modernism these days: Liberty Market. The next scheme to be developed, Wahdat Colony (1958) was planned especially for government employees. In those days, in the "one unit period" of Pakistan, Lahore was the capital of the province of West-Pakistan. In 1966 the construction of Iqbal Town started, under the guidance of Canadian consultants. Later on the scheme was adapted and reformed by LIT. In the late 60s new standards were adopted in the planning of New Garden Town. A part of the area was already built up in 1950. The evolution of this scheme is obvious on the map: a clear reduction of plot size is visible from the North-East to the South-West. It contains commercial and recreational centres and is also based on British planning ideas. At the same time the first scheme based entirely on the modern idiom arose: Kot Lakhpat or Township. It was clearly meant for low income groups and consisted of one and two room dwelling units. It aimed at solving the Katchi Abadi-problem and was set up with American aid after a design of Doxiadis-associates. In spite of his well-known rhetoric it was not well adapted to cultural and environmental aspects. There above no employment was provided. So it took a long time to grow well-established. Nowadays it lies adjacent to one of the three major industrial areas of Lahore,²⁸ but still many inhabitants have to go to the city centre for their jobs or to do their shopping, involving high costs of transport for these low incomers!

Table 4.2: area, population and density of some schemes.

scheme	Area (in acres)	Population (x 1000 pers.)	Density (1000 pers. per acre)
Shadbagh	1915	112	58
Gulberg	606	46	75
Township	1000	60	60
Model Town Garden Town	1155	96	83
Muslim Town	1840	61	33
Shadman	330	76	230
Gulshan-e-Ravi	560	98	173
Civil Lines	500	108	224
Mall Road	820	50	62

Source: LUDTS; 1981

Because the central jail was also shifted to Township, on the former jail grounds a new scheme could be developed: Shadman. This area, near to the city centre was designated to the upper and middle classes again. It is a very popular locality nowadays, in spite of being more congested than others.

In the mid-1970s inter alii the Model Town Extension-scheme was developed, on ground bought by the Lahore Development Authority from the Model Town Society. Also Faisal Town arose, meant for lower and middle income groups. At the moment Lahore Development Authority is busy with developing Jauhar Town, to the south of the New University Campus.

4.2 Theoretics on planned schemes

Two main reasons exist for the development of planned schemes. In the first place the attempt to reduce the actual housing shortage in Lahore. According to the Lahore Development Authority the Model Town Extension scheme was started with the objective "to ensure streamlined growth of the city of Lahore and to provide plots for the construction of various sizes of houses." (PC-1 Model Town Extension-Scheme; 1975; p.3).

In the second place it has always been so, that the upper and middle class wanted to live more or less segregated from the lower classes, which form the large majority of the population. Nearly all schemes thus far²⁹ are meant for people of the upper or middle class. Quite often it is even so that a middle class scheme is populated by residents belonging to the upper class. This phenomenon of "social overvaluation" of a scheme is proven e.g. for Iqbal Town.³⁰ As a rule private planned schemes and schemes set up by a corporation (e.g. the PIA schemes) are meant for even higher income groups than LDA-schemes.

Not only are planned schemes expensive to purchase, but they are also expensive to live in. Air-conditioning and refrigerators are badly needed and costs of transport are high because of their low density as compared to indigenous wards.

By large, all schemes are based on the same planning assumptions, concerned with the distribution of activities and the organisation of land use. These assumptions have never been explicitly evaluated by LDA although it is highly questionable whether they are appropriate and useful in Pakistan.

1. Self-containment of schemes. This aspect can be traced back directly to the British. It can be called a modernized version of the neighbourhood- principle. In the meantime the idea has been under attack from two sides. In the first place on theoretical grounds. In the original meaning a neighbourhood was a self-contained community, providing the complete range of daily services. In this sense it was e.g. the sector of a Garden City that provided the non-daily goods in the centre. Since Christaller designed his ideas of a continuous range of services, with all their own threshold and range, the idea of a twofold range of (daily/non daily) services is doubtful. On the practical side the ever increasing mobility challenged the neighbourhood principle. Society became structured more and more on "interest base" instead of territorial. A "community without propinquity" has arisen. In Pakistan this society is even further subdivided on the basis of classes, clans, strata and circuits. A "community feeling" within the neighbourhoods is therefore fairly non-existent.
2. Separation of land use. Although on "scheme-scale" self-containment is pursued (see below), on both supra- and sub-scheme scale different land uses are strictly separated. According to mr. Saniullah Hashmi, deputy town planner of LDA, "mixing of land uses is wrong; it is against our planning policy. For the areal percentages under different uses we adopt international standards."³¹

Apart from the constant factors ("self-containment and separation of land use") a slowly evolving process of exchanging British planning idiom for modern idiom can be detected.

The first schemes were clearly based on the Civil Lines ideas. They continued to have very large plots and expansive infrastructure but were poor in facilities and services. Since then a continuous decrease of average plot size has taken place. In the 70's "social values had undergone another change, and provision of public amenities could not be over looked" (Webber 1964). How far political changes played a role in this remains to be seen.

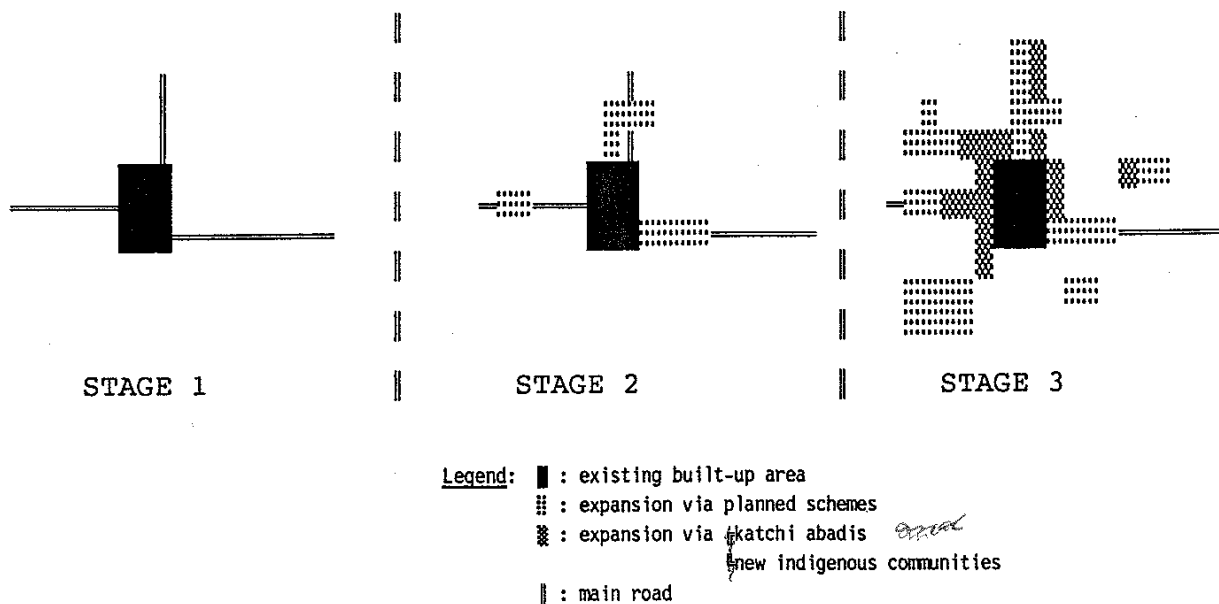
4.3. The development of city and schemes

Lahore grows by means of different types of settlements (Katchi Abadis, New Indigenous Communities, Planned Schemes), but it expands almost only via planned schemes. The upper strata of the population tend to move out of the city to new schemes in the urban fringe. The urban expansion thus causes the various areas of the city to undergo a regular sequence of growth, stability and absolute decline as the city's expansion throws its crest outwards to the urban fringe. The land that is left over (within the city and between the schemes) is taken over by the lower strata. Most of the time these left-over areas are the least suitable for residential purposes, because of factors of "site" (e.g. poor drainage situation) or "situation" (e.g. in relation to places of employment). The overall picture of the expanding city is thus one of leaping out (Gulberg, Model Town, New Campus, etc.) and later on filling in.

Nominally the planned schemes are meant for all income groups. In reality they are affordable only for the upper quarter of the population (named the upper and middle classes). Of these the middle classes are more and more served by Lahore Development Authority, while the upper class serves itself, by means of

private schemes. The size of Lahore Development Authority schemes is appointed more by economy of scale and especially the availability of suitable and purchasable land, than by theoretical insights such as the neighbourhood principle or by a specific image of the target group.

Fig. 4.2: The expansion process (schematic).³²



On the scale level of the individual scheme two evolutionary processes are of particular interest. The development of land prices has been treated already in paragraph 3.5. The characteristic development of land use³³ consists of three phases.³⁴

In phase one, starting when the first households settle in the new scheme, some temporary stalls, selling tea, lunch or dinner, basic services and/or utilities, move in on vacant plots. Also a great number of hawkers visits the scheme, at this time totally unserved by "regular" commercial facilities. Even on the small time scale these stalls are temporary (or "Katchi"), they have to move to and from different plots. According to Qadeer (1983, p.188) "economic and social interdependencies link together the sanctioned and the unapproved activities".

When the scheme nears completion phase two starts. At this time some regular shops start business in the planned shopping centres, accompanied by many bazaar-like clusters of stalls and shops. The legal shops have a western and expensive character (selling video's, toothpaste and cold drinks), while the illegal take care of daily needs (meat, fish, vegetables, basic services). In the last phase of development, after completion, residential plots, especially on central locations are, little by little, transformed into offices. This process takes place on a large scale along boulevards and other points of high access and visibility. After some time, when government offices have taken a high stand in this process, it becomes legalized. Lahore Development Authority has appointed some "special areas" (LDA-building regulations; 1984; p.33)

where this second layer of land use is allowed to arise (made up by e.g. the Upper Mall, and the Main Boulevard of Gulberg and Garden Town). These aspects of land use, together with other factors such as location, plot size and original target group create the specific image of every planned scheme. It seems to be this overall image that defines the attraction of a scheme to residents.³⁵

4.4 The three schemes: history and general description

4.4.1 Model Town

The plans for the Model Town-scheme were published in 1919 by Khem Chand (Chand 1930). In 1921 the first general meeting of 200 founder-members of the Model Town Society followed. When public and governmental support was ensured, a suitable site was selected. There followed a two years-struggle with the Forest Department, after which the Model Town movement was obliged to purchase 1963 acres of land instead of the intended 1000 acres, for the price of 9 lakh of rupees. The Society was formally erected in 1924, and the plan was laid out. In 1926 the first house was built, and expectation was that the scheme would be completed in 1928.

The scheme seemed to be a success. The demand for housing, or a plot in a cheaper, cleaner, more comfortable environment than the Walled City and its extensions could provide, for low and middle income groups, proved to be large. In 1930, Khem Chand wrote "The scheme for Model Town and its realization", and remarked that the point had been reached that all of the plan could be managed, 834 plots were already sold, of which 358 plots of 6 kanal, 169 of 4 kanal and 307 of 2 kanal. Around 1935 block B, C and J, the blocks closest to the city, were already filled up. The other blocks were partially built up, with the buildings concentrated in the area between the middle and inner ring.³⁶

Nevertheless Khem Chand pointed out some problems, as there were a lack of funds (4 lakh of rupees had to be spent in spare land), and an inefficient organisation. Maybe the ideology behind the scheme can be added. It proved to be difficult to gain enough enduring support for the plan. Yet Khem Chand and his Model Town Society seemed to succeed: the only town of this kind in at least the Indo-Pak subcontinent emerged.

Khem Chand had an imaginary mind. Some of his ideas are completely unrealistic, but all of them are interesting and noteworthy to mention (Chand 1930, p. 45-47, 74, 89). "In the centre of the town, there will be a hill, which will be 70 ft. from the water level of the lake,... Inside the hill there should be a cave restaurant. Approach to the hill should be by means of a ferry or ropeway". "To see that these chowkidars do their duty and not sleep, extra establishment is to be kept to keep watch over them. I have never heard of any of these ordinary chowkidars ever catching a thief or housebreaker red-handed or even when he is running away. To improve the present watch and ward system, I would require the chowkidars to patrol the streets on bicycles, with meters attached to them to indicate the number of miles that each one of them would have done during the night". "Several names were suggested for the Town, but they were not very appropriate ... "Model Town" was considered good enough to go on with, and it was considered that a suitable name may be thought out later when the scheme has made some progress... it would be worth spending Rs 500 for a really good name..."

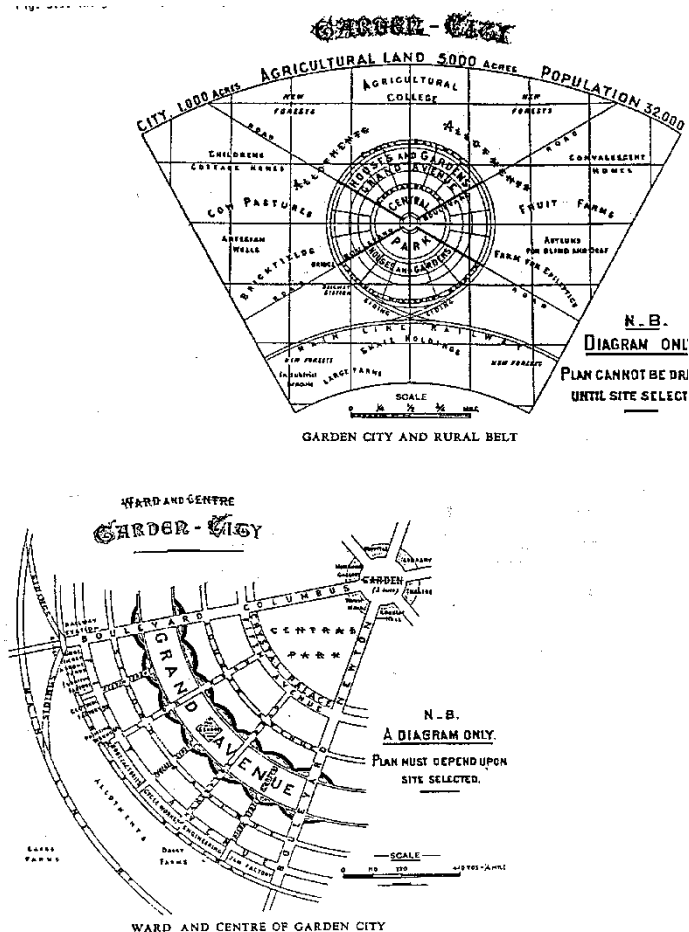
The site of the town proved to be ideal: far away from congested Lahore, but close enough to enjoy its "good" life. The location was then 3 kilometres from the Lahore Municipality boundary.

In accordance with Ebenezer Howard's ideas, Model Town was to be a garden city. It was to be based completely on cooperative principles. Shops would be run by the Society and houses constructed by it.

The garden-city- foundation of Model Town was ensured by two bye-laws of the Society. According to these each house would have a garden, and out of the total area of a plot not more than 1/3rd could be built upon. Furthermore, along all streets trees would be planted.

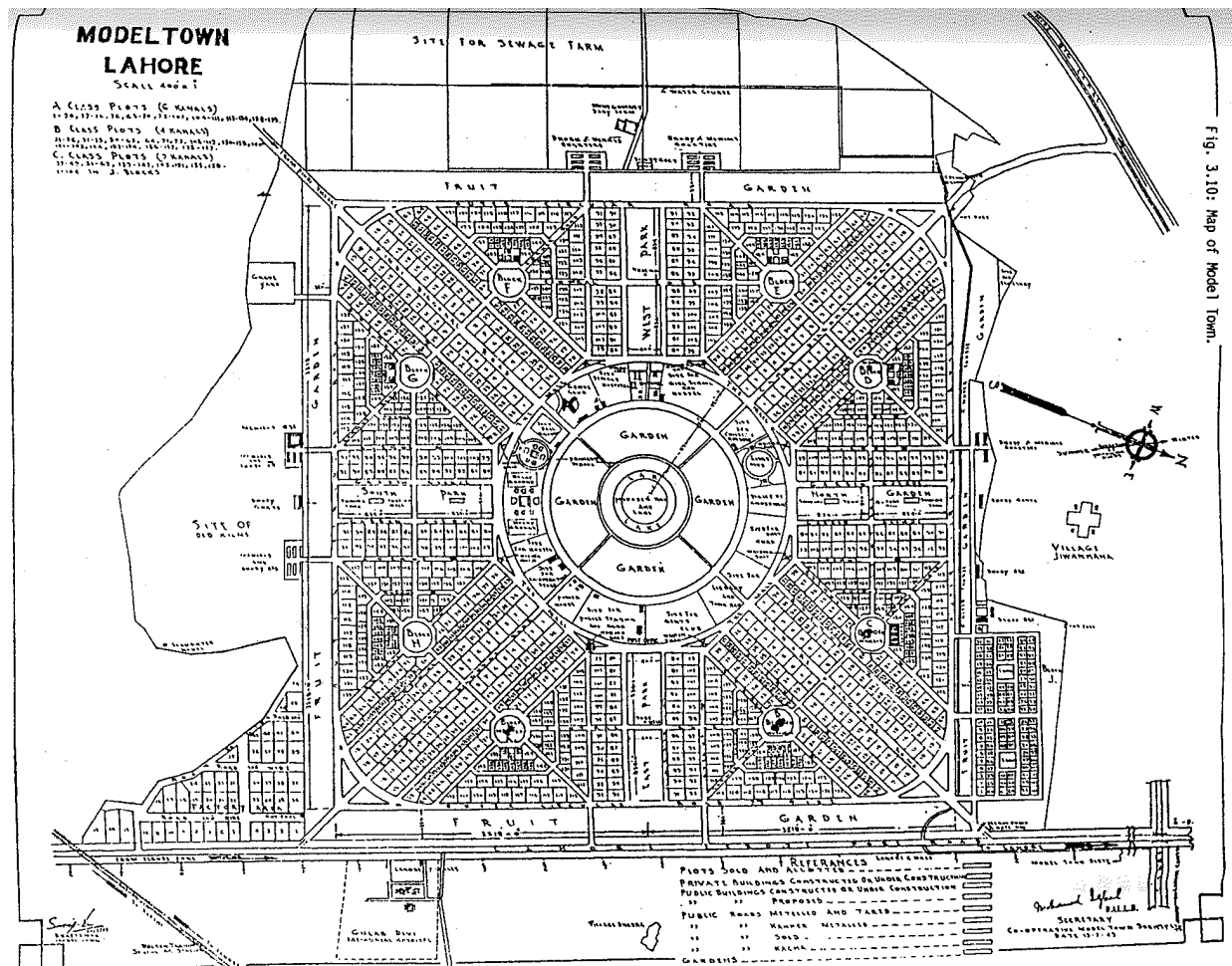
As indicated in figure 4.4 the shape of the town would be square, with in the middle a central garden, surrounded by a circular road. All public buildings were located along this inner circular road. An outer road formed the boundary of the town. Between both rings a third circular road was planned. Four main roads divided the town into four segments. In the middle of each of these four parts parks are planned. The result is that eight residential blocks can be discerned, each of them a self-contained entity. The houses were to be located in concentric rings, between the inner and outer road. So all houses would be equidistant from the central area.

Fig. 4.3: The garden city according to the ideas of Ebenezer Howard.



Source: Howard, 1965.

Fig. 4.4: Map of Model Town.



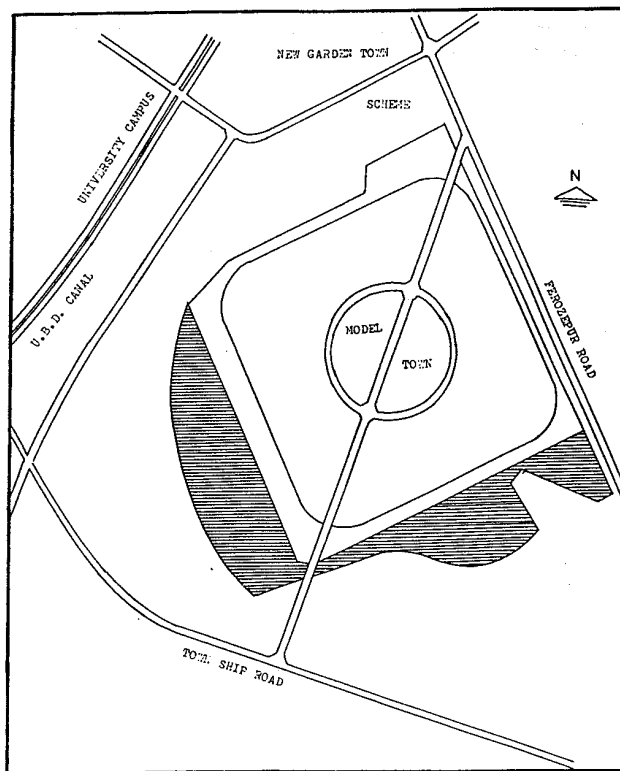
The scheme is enclosed by Ferozepur Road, Model Town, the University Campus and the Upper Bari Doab canal. It is subdivided by the Main Boulevard. In the northern part the village of Davisabad is enclosed and some other older parts can be discerned.

One part of present day New Garden Town was not included in the first plans. It is built on grounds that first belonged to the Model Town Society, but were later sold to the LDA. At present it forms a striking part of New Garden Town, with small plots and roads.

4.4.3 Model Town Extension

The Model Town Extension project started in 1975, and was supposed to "provide houses, complementary services and utilities, and sites for shops, industry, health, educational facilities and other public buildings and to contribute to a streamlined growth of Lahore." (PC-1; Model Town Extension scheme, 1975).

Fig. 4.6: Site of Model Town Extension.



The scheme was designed as a self-contained community and is residential in character. It is proposed to cater mainly for the lower and middle income groups. The site is located on the periphery of Model Town and is surrounded by the New Garden Town and the Faisal Town scheme. The site has lain vacant for several decades, in fact since the inception of the Model Town Society. There was an increasing pressure for the provision of additional housing accommodation in the metropolitan area of Lahore, but the Model Town Society was not in a position to develop the site in line with the growth trends and physical needs of Lahore. LDA therefore took it upon itself and acquired the land through negotiations with the Model

Town Society. The acquisition was carried out at a mutually agreed rate of about Rs 30,000 per acre (PC-1; Model Town Extension scheme, 1975).

The total amount spent on the acquisition of the land is thus about 14.5 million Rupees. This is much more than the Model Town Society had paid for it in 1924, but far less than the real value of the land. Nevertheless both organisations were quite happy with the agreement. The Model Town Society 'earned' about 14 million, which could be spent on the development and upkeep of Model Town and the LDA earned far more, since the price of undeveloped land is about 10,000 Rs per kanal.

4.4.4 Some facts about the study area

Tables 4.3, 4.4 and 4.5 provide some basic information about the study area that does not need any further elaboration.

From these figures it is clear, that the LDA-figures on population- densities, are in conflict with the real data in the study-area. In the case of Model Town Extension this might be explained by the delimitation of the area. L, M and N block are not completely representative for the whole of Model Town Extension in this respect.

In the case of the other schemes, it is difficult to give a sound explanation. The LDA-data might be wrong, considering that:

- The LDA-figures date from 1981. It may be expected that population- densities have increased in recent years. (After the further development of New Garden Town and the second youth of Model Town.)
- The western part of New Garden Town consists of smaller plots. (Yet this means that the LDA-data should even be lower than the figures in the study!)
- B- and C-block of Model Town were densely built up in 1950. This would bring about that these blocks have a relatively low population-density nowadays, as compared with D- and E-block.
- The study-area contains the North-garden as well as the West-garden of Model Town, contributing to a population-density too low for the whole of Model Town.

Table 4.3: Number of plots in the study area (excluding flats).

Shershah-block	151	1230	2163	2592
Aibak-block	93			
Aurangzeb-block	198			
Tariq-block	446			
Ataturk-block	342			
L-block	323	933		
M-block	580			
N-block	30			
D-block	226	429	429	
E-block	158			
K-block	45			

Source: plans of the three schemes.

Table 4.4: Number of plots, dwellings and inhabitants, total area and population density in the study-area.

Scheme	plots	Dwellings ¹	Area (cells)	Area (acre)	Inhabitants (actual number) ²	Inhabitants (potential number) ³	Inhabitants per acre ⁴
Model Town	429	683	782	417	4,320	4,320	10
Model Town Extension	933	633	330	176	3,960	5,830	23
New Garden Town	1230	970	445	238	6,010	7,690	25
Total	2592	2286	1557	831	14,290	17,840	17

1) Source: field survey.

2) Derived by multiplying the number of dwellings and the average number of persons per dwelling (table 6.1).

3) When the schemes will be completely built up.

4) Based on the potential number of inhabitants.

Table 4.5: Population-densities; LDA-data and own figures.

	Persons per acre in New Garden Town and Model Town	Persons per acre in Model Town Extension
LDA-data ³⁹	34	62
Own calculations	18	23

Table 4.6: number of flats in study-area.

Sea Breeze	24
Model Town Extension	60
	60
	336
Model Town	128
Total	608

Chapter 5: Land use

5.1 Planning

The first aspect that catches attention when observing the planning of land use, is the segregation of different land uses. This aspect can be studied at (at least) two levels. On city level, different "zones" can be discerned, according to the Master Plan. Thus e.g. residential, industrial and commercial areas exist. On lower levels, for example within a scheme, mixing is possible. A residential area may contain commercial plots, plots for community buildings, graveyards and even industrial plots. The reason for this is clear: schemes must be self-contained, and the need for transfers must be reduced to a minimum.

Qadeer (1983; p.193) discerns two levels of land use:

"The functional specialisations of an area ..., lay the basis for its dominant land use, whereas functions which are either complementary or contributory to dominant activity constitute the subordinate land use". Later the same author concludes that Lahore appears to be a city of mixed land uses, and that there is little internal uniformity of activities and land uses within a neighbourhood. As a consequence Qadeer wonders how zoning as a regulatory device can be applied. (It must be said however, that Qadeer is quite detailed in discerning different land uses.) Qadeer (1983, p.203-206) continues with remarking that

"The coexistence of two modes of operation and the institutionalization of corruption militate against any assumed functional uniformity of activities... ...Similarly, if only about 12 percent of new construction was proceeding with the approval of local authorities, it made little sense to treat unapproved land uses as deviations from public norms. In fact, the unofficial development was the norm. These examples point to the inadmissibility of concepts such as gravity, gradients, or zones of uniform land uses".

... "Scarcely any area could be called exclusively residential, commercial, or industrial, except for the officers' residential estates. There are shopping streets, industrial clusters, institutional complexes and other nodes of intense activity, but they are seldom singular in character. The success of one activity at a location attracts other to take advantage of its drawing powers and ultimately leads to a complex of linked land uses".

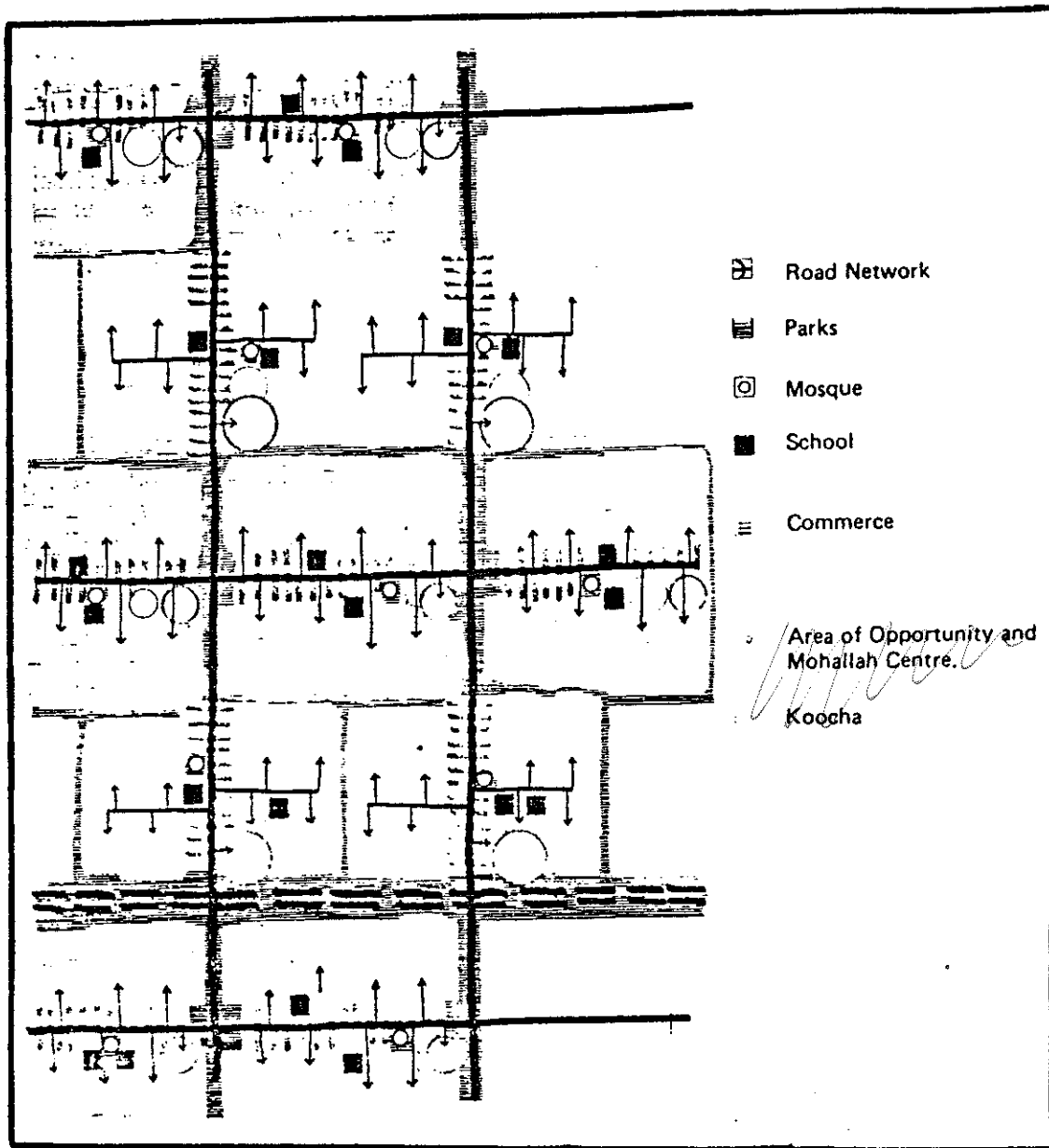
... "Lahore is not a city of separable land uses, except for higher-level special activities. It cannot be meaningfully divided into residential, commercial or industrial zones..."

As a contrast: in the foreword of the LDA-building regulations (1984, p.2), it can be read that

"..... the main impediment to the adoption of uniform building regulations for the entire city has been the absence of a distinct and separate set of planning-regulations. Thus the building regulations have also to serve the objectives of controlled urban development and redevelopment. Such as land use, rights-of-way of streets, building lines, parking, special areas, and densities....." Yet in the actual regulations, only one rule regarding this aspect is to be found. Regulation 17 says:

"No land or building shall be used in a manner inconsistent with the use prescribed in any approved scheme or the Master Plan as the case may be" (Building Regulations, LDA; 1984, p.14). Figure 5.1 is an example of a typical Master Plan-map. The projected land use is clearly based on the zoning and separating principles.

Fig. 5.1: Preferred conceptual model (according to LUDTS 1981).



Source: LUDTS, 1981.

One of the results of this planning on obscure and obviously unusable foundations, is that at many places in a scheme so-called confused space arises. So may urban peasants for example erect their kacha-dwellings on already sold but not yet built up plots, without knowing for how long they will be allowed to stay there. Of course in that case no attention is paid to the upkeep of the plot and its surroundings. The same can happen on grounds designed but not yet developed as parks or shopping areas. Because no clear notion about the use and ownership of the space exists, people do not feel any responsibility for it either.

Indeed, the LDA-plans for the schemes reveal for each plot its destination (figure 5.2). Thus there are residential plots and places reserved for schools, parks, shops, graveyards, public buildings and so on. The prescribed total land use of the schemes may be given in a table too (see table 5.1).

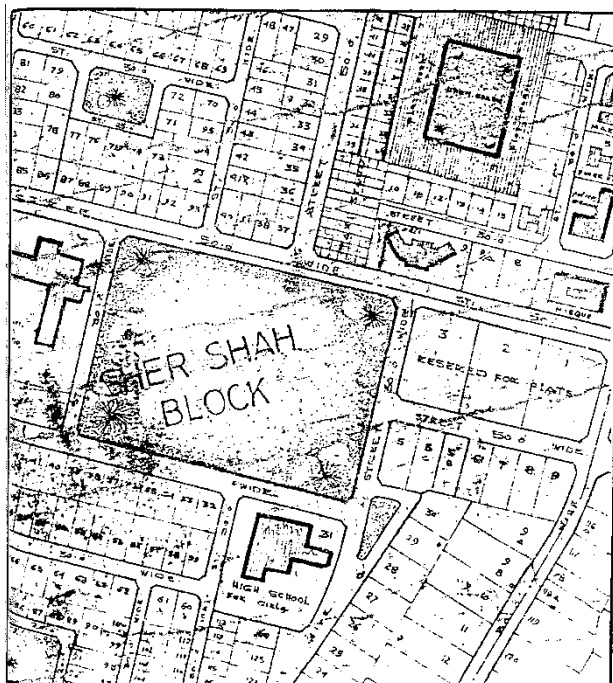
Table 5.1: The planned land use of Model Town Extension.

Proposed land use	In percentages
Residential	45
Flats	5
Commercial	2
Industrial plots	8
Roads/streets	27
Open spaces	9
Public buildings	1
Graveyard	2
Total	100

Source: PC-1, Model Town Extension-scheme.

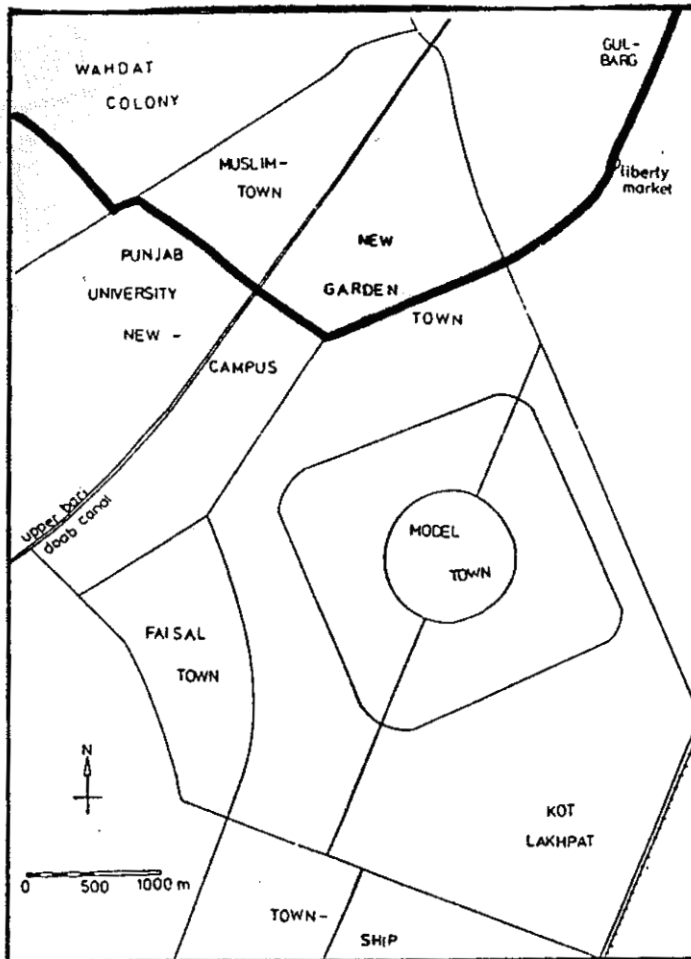
Normally the prescribed land use cannot be changed. Yet some "special" areas exist. One of these is indicated in figure 5.3. The plots abutting on Gulberg Road, and the main Boulevard in Gulberg, New Garden Town, Muslim Town and Allama Iqbal Town, may be subjected to change of use from residential to special commercial, but subject to prior approval of the Director General of LDA, which may be granted by him only when a "No Objection Certificate" is produced from the owners of adjoining properties and on payment of such a fee as prescribed (nowadays one lakh of rupees). Besides this one, four other special commercial areas and ten general commercial areas exist, where a specific conversion of use is allowed (Building Regulations, LDA; 1984; p.14).

Fig. 5.2: Part of the New Garden Town-scheme plan.



Source: LDA, plan for New Garden Town.

Fig. 5.3: The areas abutting on Gulberg Road, and the main Boulevard in Gulberg, New Garden Town, Muslim Town, and Allama Iqbal Town, designed as special commercial area.



Otherwise conversion is not allowed. An escape clause exists however; relaxation in the provisions of the building regulations is granted, whenever "sufficient" reasons therefore exist. A special committee is established to examine the suitability of changes in the original plans and destinations. After conversion into public or commercial use, the residential building regulations remain valid. As a consequence, buildings on commercial plots are most often multi-storeyed, and the second and higher floors have a residential function. Yet residing here is more expensive than living on an ordinary residential plot, as commodities such as gas, electricity, and water are more expensive.⁴⁰

5.2 Development

At first glance land use seems to be reasonably mixed in the study area (Map 1). Map 2 shows more uniformity, and now the principle of segregating "incompatible" land uses appears to be more successful. In these residential schemes indeed some plots are set aside for parks, public facilities and shops, in

accordance with the neighbourhood principle, but tables 5.2 and 5.3 display the highly residential character of the area. Mixing takes place only on a very small scale and clustered.

Yet these data do obscure some facts. Some of the information that is lost here, for cartographic reasons, is reproduced in the maps 3 and 4. The picture gains complexity now. Nevertheless the separation of land uses seems to be the standard, and the neighbourhood principle might be working.

Table 5.2: Distribution of dominant land use per scheme, in cells

	New Garden Town		Model Town Extension		Model Town		Total area	
	cells	%	cells	%	cells	%	cells	%
Residential	227	51	148	32	269	41	644	41
Commercial	14	3	5	1	21	3	40	3
Recreational	22	5	50	11	101	15	173	11
Road	57	13	77	17	125	19	259	17
Agricultural	9	2	21	5	6	1	36	2
Public	18	4	9	2	30	5	57	4
Waste	52	12	110	24	72	11	234	15
Rest	13	3	1	0	18	3	32	2
Not applicable	33	7	36	8	13	2	82	5
Total	445	100	457	100	655	100	1557	100

Table 5.3: Distribution of secondary land use per scheme, in cells

	New Garden Town	Model Town Extension	Model Town	Total area	
				cells	%
Residential	33	58	68	159	10
Commercial	8	3	5	16	1
Recreational	7	2	15	24	2
Road	180	170	184	534	34
Agricultural	5	13	4	22	1
Public	7	0	5	12	1
Waste	26	41	41	108	7
Rest	3	6	8	17	1
Not applicable	176	164	325	665	43
Total	445	457	655	1557	100

When comparing the data of the three schemes, it becomes clear that all three schemes are highly residential. Model Town Extension is the youngest one and this might explain the low percentage of commercial and public plots and the high percentage of plots lying waste (being almost as much as the number of residential plots). The large number of agricultural plots can easily be explained as the effect of including K-block in Model Town Extension. A further aspect to be noted is the large percentage of recreational space in Model Town Extension and Model Town, as compared with New Garden Town, and

the large number of roads in Model Town. Every LDA-scheme must contain about 57% of residential plots, while the remainder of the area is reserved for roads, parks, disposal stations, graveyards and public buildings. Alas this is not categorized in more detail. All three schemes seem to be in line with this.

On a lower scale level, the individual block, the neighbourhood principle seems to be non-existent: not even all the "necessary" facilities are available (table 5.4 and 5.5). Almost every block misses either recreational space, commercial facilities or public facilities. (The situation in D-block and E-block is much better than might be concluded from these tables, as the facilities mentioned above are found at the inner circular road. Due to their location at the inner side of this road, these facilities are included in the Model Town-park.)

The conclusions drawn before are not contradicted by the secondary land use characteristics. Non-residential land uses are clustered again (map 5 and 6; tables 5.3 and 5.5). The high percentage of roads, especially in New Garden Town and Model Town Extension is remarkable in map 5. This is to be explained by the smaller plot size in these schemes, as smaller plots need relatively more space assigned to roads.

Table 5.4: Distribution of dominant land use per block, in cells

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Par k	Total
Residential	56	54	42	29	46	30	62	22	34	143	126	0	644
Commercial	2	1	1	10	0	0	5	0	0	4	4	13	40
Recreational	0	3	1	4	14	3	44	3	0	2	2	97	173
Road	16	9	2	24	6	15	28	5	29	48	48	29	259
Agricultural	4	5	0	0	0	4	0	0	17	0	2	4	36
Public	15	0	0	1	2	0	6	0	3	0	1	29	57
Waste	4	0	20	17	11	22	31	15	42	16	16	40	234
Rest	9	0	1	3	0	0	0	0	1	12	6	0	32
Not appl.	6	5	9	9	4	16	19	0	1	10	3	0	82
Total	112	77	76	97	83	90	195	45	127	235	208	212	1557

Table 5.5: Distribution of secondary land use per block, in cells

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
Residential	4	4	9	5	11	15	23	1	19	38	29	1	159
Commercial	2	1	1	3	1	0	3	0	0	0	3	2	16
Recreational	2	2	2	1	0	0	0	1	1	6	1	8	24
Road	49	44	30	22	35	26	94	31	19	88	66	30	534
Agricultural	2	3	0	0	0	4	0	0	9	0	4	0	22
Public	4	0	0	2	1	0	0	0	0	0	3	2	12
Waste	6	1	9	5	5	7	3	0	31	19	20	2	108
Rest	0	0	1	1	1	0	0	0	6	4	4	0	17
Not appl.	43	22	24	58	29	38	72	12	42	80	78	167	665
Total	112	77	76	97	83	90	195	45	127	235	208	212	1557

Chapter 6: Roads

6.1 Planning

In the Building Regulations of LDA (1984; p.14) the following rules are specified with relation to roads:

* The minimum right of way for arterial, major and secondary roads, pre scribed as such in the Master Plan, shall be as specified below:

- a) Arterial roads - 250 feet.
- b) Major roads - 120 feet.
- c) Secondary roads - 80 feet.

* For roads other than those mentioned above, the right of way shall be:

- a) As prescribed in the Approved Schemes.
- b) As established at site in existing built up areas.
- c) Not less than 20 feet in all other cases.

Indeed, the width of some of the roads in the schemes is prescribed in the plans of these schemes. Yet many of these data are missing. Also the dimensions clearly relate to width between walls. According to a private developer these dimensions are only indicated because the LDA has to do so by law. It does however not act according to these dimensions, whereas private developers are indeed controlled on this aspect. According to observations in New Garden Town however, LDA does act in accordance with the rules. A comparison of this kind could not be performed in Model Town Extension, because here data for the width of roads are almost all absent.

As the road system dates from the thirties, in the Building Regulations of the Model Town Society nothing is said about the right of way. In 1930 the outer road was 75 feet wide, the four diagonal roads 90 feet and the inner circular road 70 feet. The other roads were between 40 and 50 feet. The objective was however, that each road would be 42 feet wide, of which 30 feet would be metalled and the other 12 feet would be used as pavement for the pedestrians (Chand; 1930).

6.2 Development

The large number of roads in the study area is shown in map 1 and 5 and in tables 5.2 and 5.3. Roads form the dominant land use 259 times and the secondary land use even 534 times. Maps 7, 8 and 9 contain data with specific relation to roads, every time a road is present in a cell. In this case even 70% of all the cells contain at least one road. Table 5.2 gives the impression that Model Town has the higher percentage of roads compared to Model Town Extension and New Garden Town. This is contradicted however by table 6.1 to 6.6: All schemes have the same absolute number of cells, that contain at least one road, and thus the relative number for Model Town is far less than that of the other two schemes. The explanation is simple: the residential plots of Model Town are larger. Also the Model Town Park (containing 212 cells) is included in the Model Town scheme.

Map 7 (width of paved road) also gives a clear picture. The widest roads are the ones surrounding the schemes, the road forming the boundary between New Garden Town and Model Town Extension and the roads round the main shopping area of New Garden Town. In the second category, (roads of 5 or 6 metres wide), the boundaries between the different blocks plus some roads in New Garden Town are found. The

third group (4 metres) contains the inner ring road of Model Town, some roads in New Garden Town and Model Town Extension and the roads between Model Town and Model Town Extension. The narrow roads are found in the youngest part of New Garden Town, the area that first belonged to the Model Town Society.

In particular the geometric street pattern of Model Town is obvious. For Model Town it is clear that the extreme large and small roads miss (table 6.1). Just the opposite can be said of New Garden Town. There is quite a number of small roads (in the youngest part) and a large number of wide roads (mainly on the outskirts).

Nevertheless the conclusion might be that the residential areas all have roads of approximately the same size, except the youngest part of New Garden Town. The wider roads serve as boundaries between schemes, blocks or parks.

Table 6.1: Width of paved road per scheme

	New Garden Town		Model Town Extension		Model Town		Total area	
	cells	%	cells	%	cells	%	cells	%
< 2 metres	16	4	3	1	0	0	19	2
3 metres	130	35	169	48	188	53	487	45
4 metres	43	11	39	11	47	13	129	12
5 or 6 metres	109	29	90	26	116	33	315	29
>= 7 metres	78	21	52	15	3	1	133	12
Total	376	100	353	100	354	100	1083	100

Table 6.2: Width of paved road per block

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
< 2 metres	6	0	8	0	2	3	0	0	0	0	0	0	19
3 metres	20	22	47	14	27	38	84	14	33	82	101	5	487
4 metres	20	8	6	0	9	4	14	11	10	13	3	31	129
5 or 6 metres	21	21	11	35	21	15	45	11	19	42	39	23	315
>= 7 metres	31	17	0	30	0	23	26	3	0	2	1	0	133
Total	98	68	72	79	59	83	169	39	62	151	144	59	1083

Map 8 (width of road between walls) gives the same impression, although it is less uniform. The most remarkable difference is that in Model Town all roads belong to a higher category. In New Garden Town some roads have a lower mark now, and the number of narrow roads is considerably increased. Of course the specific classification may have caused some of these effects.

Table 6.3: Width of road between walls per scheme

	New Garden Town		Model Town Extension		Model Town		Total area	
	cells	%	cells	%	cells	%	cells	%
< 6 metres	32	9	0	0	0	0	32	3
6-10 metres	77	21	79	22	1	0	157	16
10-15 metres	117	31	133	38	267	75	517	48
15-20 metres	72	19	88	25	11	3	171	16
>= 20 metres	78	21	53	15	75	21	206	19
Total	376	100	353	100	354	100	1083	100

Table 6.4: Width of road between walls per block

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
< 6 metres	7	0	21	0	4	0	0	0	0	0	0	0	32
6-10 metres	21	10	12	9	25	8	55	16	0	1	0	5	157
10-15 metres	31	27	29	14	16	42	57	9	25	98	112	31	517
15-20 metres	8	14	10	26	14	10	31	11	36	5	6	23	171
>= 20 metres	31	17	0	30	0	25	26	3	1	47	26	0	206
Total	98	68	72	79	59	83	169	39	62	151	144	59	1083

The most important feature, that is to be seen in map 9, is the overall good quality of roads. The roads of the lower quality are found only in the relatively young areas: Model Town Extension, the area between K-block and Model Town Extension and the newest part of New Garden Town. One aspect in table 6.5 to be noticed, is the good quality of roads in Model Town (realized after the sale of spare land to the LDA). The roads in Model Town Extension seem to be slightly better off than the roads in New Garden Town. Both schemes have almost 60% in the highest category (asphalt, good). Qadeer's (1983) remark that: "Faisal Town, a locality recently built by the LDA, looks like a part of Mohenjodaro. Lanes have cracked and drainage busted." can be true only for schemes immediately after their conception.

Table 6.5: Type of road per scheme

	New Garden Town		Model Town Extension		Model Town		Total area	
	cells	%	cells	%	cells	%	cells	%
Unpaved	4	1	5	1	0	0	9	1
Gravel	49	13	30	9	0	0	79	7
Brick	9	2	1	0	0	0	10	1
Asphalt, bad	95	25	112	32	0	0	207	19
Asphalt, good	219	58	205	58	354	100	778	72
Total	376	100	353	100	354	100	1083	100

Table 6.6: Type of road per block

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
Unpaved	4	0	0	0	0	1	0	0	4	0	0	0	9
Gravel	14	5	26	1	3	15	15	0	0	0	0	0	79
Brick	3	3	3	0	0	1	0	0	0	0	0	0	10
Asphalt, bad	17	13	21	18	26	29	47	13	23	0	0	0	207
Asphalt, good	60	47	22	60	30	37	107	35	35	151	144	59	778
Total	98	68	72	79	59	83	169	39	62	151	144	59	1083

Chapter 7 Housing characteristics

7.1 Planning

Not much is said about housing characteristics in the official planning documents. These characteristics are highly individual in character. A certain house is built by a certain owner, after consultation of a certain architect and building corporation, without too much influence by the government or another authority concerned with urban planning. Three factors however can be discerned, which do play a role in the planned development of a neighbourhood:

1. Building regulations set the conditional framework within which the individual has a certain free choice.
2. The architectural idiom, as followed by the majority of designers determines the predominant outlook of a scheme.
3. The building activities of corporations, government or private developers.

The conditional framework as set by the (Lahore Development Authority- and the Model Town Society-) building regulations can be said to be very strict on some points. Even the minimum size of a separate room is prescribed. Most of the regulations however, are rather irrelevant. Furthermore doubts can be raised regarding the degree in which these minor rules are obeyed by the individual owners. It is true e.g. that a design proposal must be approved (by LDA or MTS), but in how far it is checked by these authorities, whether this proposal is indeed followed, is not at all certain.

Specifically relevant are the regulations concerned with the maximum measures of dwellings and the maximum coverage of plots. It is clearly defined which part of a plot of a specific size may be covered and which must be left open.

Apart from these specific building lines, also an absolute maximum coverage is defined (see table 7.1). Maybe assuming that this is not yet enough, a maximum plot/floor area ratio is fixed by LDA (table 7.1; column 3). Three storeys are allowed, but as can be seen in the table, either this eventual third storey must be a very small one, or the coverage of the site must be drastically reduced. (For a plot of 1 Kanal from 65% to 43%.) The reason for this "obligation" to build one or two storey buildings is not explicitly stated.

Table 7.1: Maximum coverage of site according to LDA (Model Town Society) building regulations.

Size/zone of plot	Maximum coverage of site	Maximum plot/floor area ratio
< 7 Marlas (= 160 sq. m)	75%	1:1.5
7-10 Marlas	70%	1:1.4
10 Marlas – 1 kanal	65% (60%)	1:1.3 (1:1.25)
> 2 kanal (= 840 sq. m)	55% (50%)	1:1.25 (1:1.25)
Site earmarked for apartment buildings	55%	1:1.3

Source: Building regulations LDA, Building regulations MTS.

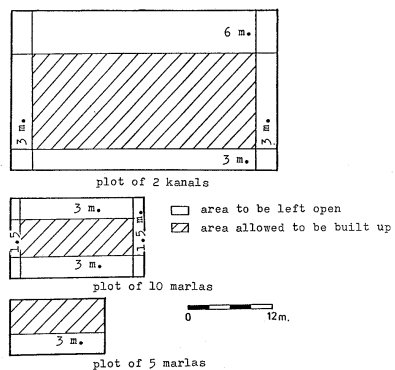
In this way, namely by developing plots of large sizes the building regulations and the physical planning process work together to preserve this very symbol of the Raj-culture: the bungalow. In how far this can be reconciled with a statement in the PC-1 for the Model Town Extension scheme is open for questioning:

"The climatic conditions of Lahore are conducive to single family residences and this scheme will cater to that need also."⁴¹

The buyer of a vacant plot in any LDA scheme is obliged to enlist a recognized architect to design the dwelling. In Pakistan in general, architects are conservative in their designing. Only a limited number has new ideas and their own images. Most of these work in larger consultant- agencies and are occupied full-time with the design of large public and semi-public buildings.⁴² The few original architects who work for private employers, are too expensive for the majority of residents of planned schemes, or not at all liked by these. So both the residents of the schemes and the majority of the architects are designing in the established and hardly evolving bungalow tradition. The archetype of a modern planned scheme dwelling is flat roofed, two storeyed, surrounded by an (irrigated) lawn, and "embellished" with large columns, wrought-ironwork, decorated fences and gates and Graeco-Roman temple-like neo-classic arches, stoa's and other ornamental "beautifications". With a little poetic licence it can be said that the words of Mumtaz (1985; p.179) about the WAPDA head office on the Upper Mall in Lahore are symbolic of the architecture in planned schemes too: "A parody on a Victorian imitation of a Moghul imitation of a Gujarati pavilion. Buildings like the WAPDA-house in Lahore are responsible for the notion that architecture is a luxury we can better do without."

Summarizing: architecture in planned schemes is one of the best examples of the thoughtless import of foreign concepts, without the try to adapt them to local circumstances, traditions, preferences and conditions (e.g. climate)!

Fig. 7.1: Maximum coverage of plots



Source: Building regulations LDA; 1984.

A third tangent of the physical planning of housing characteristics, is the building activity performed by planning authorities themselves, or by the government or private developers. As stated these are the exceptions to the rule, that says that only plot development, or a kind of "site and services" planning, takes place.

The record of LIT on this point is negligible: only a few colonies for employees were built. LDA however tries to solve the housing shortage for the low income group with the erection of flats and quarters. The latter are all (=40,000⁴³) in Kot Lakhpat/Township, (a design by Doxiadis Associates). A number of 3,000 flats had been built up to 1981, 2,000 of which in Model Town Extension.

Although these flats have thus been built in limited numbers only, still many of them are vacant. People do not want to live in a flat. Two explanations exist for this phenomenon:

- 1-Social explanation. Pakistani are not used to living in flats. The social system is in some aspects obstructive to it. The "Purdah", the seclusion expected of women, is obvious. Flats are also quite unsuitable for the joint-family system, not only because they are often too small, but especially because it is impossible to offer relatives (i.e. marrying sons) a part of the own plot. The above is the official LDA point of view.⁴⁴ It adds that although a lot of flats are vacant now, they will be sold when land prices rise even higher. People will then be forced to live in flats. In this way they and the rest of the population of Lahore will get used to it and learn to appreciate it.
- 2-Economic explanation. According to private developers the flats are not well attuned to their target group. This should be the low income group, but for them these flats are too costly. When the costs are lowered by a reducing of the floor area they get too small for this low income group, often consisting of large families. In conclusion it can be said that they are too expensive for the poor and too small for those who can afford them. The Indian architect Charles Correa is of the opinion that a combination of both factors (economical & social) makes flats unsuitable to solve the housing problem in the Third World.⁴⁵ He is of the opinion that the population has preserved its own "mythical" images of the most practical type of dwelling. The advancing of the skyscraper model as the mythical dwelling type of the western world, he judges counterproductive. It is much too expensive and unusable for the traditional social setting in India. Alice Coleman (1985; p.32) put it like this in a study on vision and reality in planned housing: "Tall buildings seem to be as conspicuous in the mental landscape as they are in the townscape."

It certainly is the case that flats are at present not the proper solution to the housing problem of the urban poor. Yet the Lahore Development Authority will continue with its own building activities. In every new scheme a special site is earmarked for flats and/or apartments. LDA plans a slow but steady increase in the number of flats. It will be worthwhile for LDA to reinvestigate thoroughly the possibilities and wishes of the target groups for these new flats, and to design them well with these wishes in mind.

In earlier times, in Model Town some flats have been built too. After a first rejection of a proposal in this direction in 1965,⁴⁶ in 1970 a project was indeed started. A number of 128 servant quarters were built on 4 original plots.

Not only the lower income groups are served by direct building activities. For the higher income groups, and especially the nouveau riches (i.e. the "overseas Pakistani" with "Dubai-incomes", as the local terms are) apartments are built by private developers. Examples are the "Sea- Breeze" flats in New Garden Town and the PEPAC-apartments in Faisal-town. The latter are subsidized by the government via the H.H.B.F.C. (=House Building and Finance Corporation).

Table 7.2: LDA building activities.

FLATS		Number of units
	Allama Iqbal Town (2 room; 4 storey flats)	440
	Allama Iqbal Town (2-3 room; terraced flats)	340
	Allama Iqbal Town (3 bedroom; 3 storey flats)	18
	Model Town Extension (2 bedroom; 4 storey flats)	2000
	Model Town Extension (2 bedroom; 4 storey flats)	60
	Model Town Extension (2 bedroom; 4 storey flats)	60
	Lawrence Road (3-4 bedroom; 4, 5, 7 storey flats)	43
	Flats near Gula Devi Hospital (2-3 room; 3 storey)	69
	Flats in Sheikh Abad (2 room; 3 storey)	72
	Flats in Faisal Town (3 bedroom; 4 storey)	18
	Total	3120
QUARTERS		
	One room quarters in Kot Lakhpat	2498
	One room quarters near Packages Ltd.	1060
	Total	3558
HOUSES		
	3 bedroom houses in Sanda	67
	3 bedroom houses in New Muslim Town	24
	3 bedroom houses in Model Town Extension	48
	2 bedroom houses in Model Town Extension	48
	Total	187

Source: LDA; 1986.

7.2 Development

First the rent situation in the research area must be clarified.⁴⁷ Nearly all dwellings are in private hands. In 75% of the cases these are the hands of the inhabiting person himself. In very few cases a family member owns the house, and in some cases a private person with no direct relation to the dweller is the owner. Rent from an institution is hardly anywhere the case. Only the flats in Model Town Extension and some corporate buildings are examples of this category.

Housing characteristics can be closely related to plot size. Model Town is different from the other schemes in this respect.

The size of dwellings is typical. The group of very large houses (defined as being larger than 400 sq.m.) are found in Model Town, especially in the inner circle (map 10). These are clearly the older houses. As can be seen in figure 7.4, in 1950 only these parts of Model Town D and E block were built up.

Model Town Extension is characterized by the smaller houses (<175 sq.m.), New Garden Town takes an intermediate position (175-400 sq.m.). Al together the accent is clearly on these medium-sized dwellings, with the group of 175-400 sq.m. taking up 64% of the total. Paradoxically in Model Town the group of

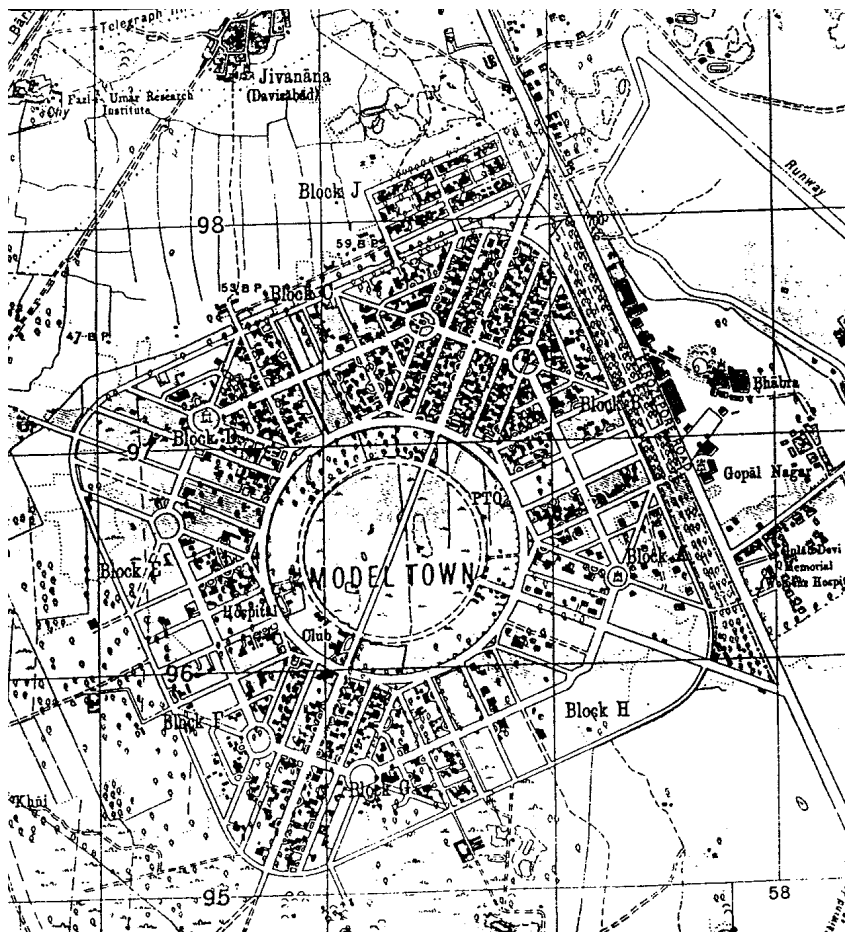
medium sized dwellings (175-250 sq.m.) is in absolute numbers more important than the group of large dwellings (250-400 sq.m.), while in New Garden Town the situation is the reverse.

The overall pattern in Model Town is confusing. Many plots are covered only partly. On others 2,3 or even more (up to 6!) dwellings of different sizes have been erected. The two newer schemes are far more regular. Striking is further that especially in New Garden Town the larger houses are located along the major roads.

In the questionnaire that was distributed in the schemes, questions were posed about the size of and the number of bedrooms in the respondent's dwelling. The answers were used to check the data that were obtained by direct observations. The thus following corrections have already been carried out. Yet the results themselves were interesting too. (The fact most striking, is that residents have, in general, no clear notion about the size of their dwelling and of their plot.) The number of bedrooms varies between 1 and 6, the average lying around 3.5.

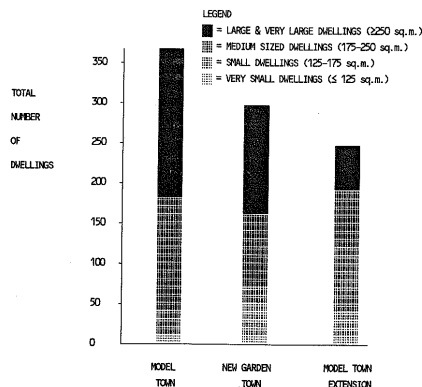
Two main conclusions can be drawn about the size of dwellings. In the first place that in time an obvious reduction in size has taken place. In the second place that the planning of New Garden Town and Model Town Extension has proven to be quite successful in this respect, as both schemes show a regular pattern.

Fig. 7.2: Model Town in 1950.



Source: Lahore Guide Map; 1954.

Fig. 7.3: Diagram indicating differences in size of dwelling between districts.



Source: Own survey.

The map "age of dwelling" (map 11) shows a clear picture of the differences between the schemes.⁴⁸ Model Town Extension is completely built up after the '80s. New Garden Town is dominated by dwellings erected between 1970 and 1979 and Model Town is divided in an outer circle (between 1960 and 1980) and an inner circle (before 1960). The average age for the complete study area is approximately 15 years (i.e. built round 1972). In the map, the category "under construction" is underestimated, although it reaches figures of 1 in every 5 houses in Model Town Extension and even 1 in 3 in its L block. In Model Town still 1/8 of the area is covered with pre-partition dwellings. In New Garden Town both Tariq and Aibak block are more recent than the other blocks. The southern part of Tariq block is built on the track of land recently bought from the Model Town Society. It is to be noticed, that in estimating the age of a dwelling the state of maintenance already plays a role. A badly maintained house simply looks older than a maintained better one. The other way round, in valuing the state of maintenance the age of the dwelling plays the reverse role. An older house is valued higher than a newer, if both have the same outlook. In spite of this last statement the dwellings in "neglected" state of maintenance are in majority the older ones in the inner Model Town area (map 12). For the rest the picture gives a confusing pattern. New Garden Town is slightly better maintained than the others, especially the Aurangzeb- and Aibak- blocks with larger plots, but Model Town Extension is far worse. The overall state of maintenance does not seem to be too promising!

The most interesting feature is the type of dwelling (map 13). The two main groups are "detached" and "semi-detached". A dwelling is called detached when it is completely surrounded by open space. Semi-detached buildings have a common partition wall.⁴⁹ When a building has two common partition walls with its respective neighbours it is called "in a row". The discern between semi-detached and in a row can in some cases be quite arbitrary when dwellings have no such feature on ground level, but do have a common wall on the first floor.

The dispersion of the different types gives a marvellous picture. Not only is Model Town nearly completely detached, while the other schemes are in a majority semi-detached, but also the pattern of the major roads is obvious. Thus the principal of "facade-planning" is successfully adopted in the study area. For the random visitor, following the main routes the schemes look much nicer than they are in reality.

It must be stressed, that semi-detached dwellings definitely belong to the bungalow-culture too. They are related more closely to detached than to "in a row" dwellings. This latter category involves centrally planned building activities.

The same can be said of the presence of flats. In all three schemes a small area is covered with this category. They are quite different however. In New Garden Town the "flats" are in fact quite large apartment buildings, called the Sea-Breeze apartments. These are meant for the upper class, and are in a reasonable state of maintenance, taken into account that they are 7 years old. They are of a reasonable size too.

In Model Town the flats are the result of building activities of the Model Town Society. They were built in 1970 and are, not yet 20 years later, in an absolutely terrible state. Most probably they will be demolished in the near future. Although meant for servants of the residents of Model Town they are now inhabited by hawkers, "urban peasants" and irregular service men.

In Model Town Extension the flats are built by LDA. Meant as a serious solution to the housing problems of the poor, they are now vacant or inhabited by (foreign) students of the nearby Punjab University or transformed into shops and offices. Two reasons for this state of affairs, resulting from the planning are already mentioned. The first was the social objection. Pakistani simply do not want to live in flats. The second was economical: flat-building is too costly to be very useful in a country like Pakistan. In Model Town Extension the flats cost around RS 60,000 if bought and approximately RS. 500 a month if rented. Compared to the income structure of Lahore's population these are enormous figures. Also people do have reasons not to be content with living in the flats. The flats are considered too small (40-50 sq.m.) to house a normal family (consisting in the study-area of 6.25 people).

Number of floors (map 14). Even flats are only 4 storeys high, obviously because otherwise an elevator must be installed. The rest of the houses are, conform the building regulations, one or two storeyed. In Model Town most dwellings have one storey. Probably they are large enough at the moment for the residents without a second floor. The other schemes have a majority of 2 floor buildings. The overall picture is quite haphazard in deed. A phenomenon not visible on the map is the later evasion of the building regulations. On plots where only a small second or third floor is allowed, on many occasions, after a "completion certificate" is obtained, the flat roof is further developed into a new floor.

With respect to plot size (map 15), it can be remarked that planned schemes in first instance were low-density and spaciouly laid out housing estates, following the Civil Lines model. They had plots of half an acre (approximately 5 kanals) to one acre (10 kanals). Yet they were poor in public services and amenities. The plots in Gulberg for example had sizes between 6 and 12 kanals. Later market realities became accommodated in defining plot size, and plot sizes were reduced. This occurred also because costs had to be lowered and pressure on land was observed.⁵⁰ Nowadays the maximum plot size in LDA-schemes is one kanal, while the minimum plot size is 2.5 Marlas. The maximum plot size in private schemes is two kanals.⁵¹

In map 16 adaptations to the original plot size can be found. If people are not satisfied with the original plot size, enlargement or reduction can take place. In this way, joint plots point out a plot size planned too small, while split plots point out a plot size too large. Both phenomena can be found in the study area.

In Model Town Extension joint plots are rare. Only 8 cells out of a total of 241 cells, contain one or more joint plots. In New Garden Town some more joint plots can be found. The location of these is interesting. All joint plots are located in the newer part of New Garden Town, on "Model Town ground". This is of course the area with a drastically reduced plot size. Even in Model Town itself joint plots are present, and in a surprising quantity (19 cells on a total of 372). Most of these are located round the inner circle. Striking is also, that in Model Town often not only joint plots can be found in a cell, but also split plots. Split plots are present in the whole of the study area, even in Model Town Extension. In New Garden Town most of the split plots are located in the northern part of the scheme, reflecting the larger plot size in this older area. Quite some split plots can be found along the major roads, in this way obstructing the policy of facade-planning. Model Town can be said to be nearly completely split up. Only 20% of all the cells are without split plots, while especially the category 'split in 3 or 4' is represented. The reasons are of course, that the planned plot size is, according to present-day standards, far too large, while the age of the scheme has provided ample opportunities for change.

Table 7.3: Development of plot size (in percentages)

Scheme/period	LIT	LIT/LDA 1975	LDA 1975-1979	LDA under dev.	LDA up to Dec 1983	New Garden Town	Model Town Extension
Plot size							
5 Marlas	11	26	19	29	28	32	35
7 Marlas	4	8	11	8	41	4	8
10 Marlas	27	42	62	31		13	52
1 kanal	19	7	7	29	31	19	5
2 kanals	13	5	0.4	3		16	0.1
4 kanals	15	2				12	
6 kanals	3	1				4	
8 kanals	8	0.3					

Source: LUDTS, 1981; PC-1 (MTE and NGT); Kaukab (1983); plan New Garden Town.

Table 7.4: Comparison of planned and realized plot size in Model Town Extension (flats and K-block excluded).

Plot size	Planned		Realized
	% of plots	% of area	% of area
5 Marlas	36.3	20.5	0
7 Marlas	7.5	6.1	3.0
10 Marlas	51.5	59.9	53.3
1 kanal	5.5	12.9	27.9
2 kanals	0.1	0.6	15.8
4 kanals			
6 kanals			
8 kanals			

A conclusion, concerning plot size in general, might be, that planning is quite well adapted to present-day social and financial conditions. Only Model Town is completely out of date.

Yet the question remains, for whom this planning has proven successful. Have the target groups indeed bought the plots, or have higher income groups taken over, and was adaptation in plot size therefore not necessary? With the help of three tables, it will be possible to perform a confrontation between planned plot size and realized plot size in the study area.

The data for Model Town Extension are given in table 7.4. It might be clear, that the realized plot size is definitely not according to the planning, as stated in the PC-1 of Model Town Extension. The plots are much larger than proposed.

A comparison of this kind, cannot be performed for New Garden Town. Data, concerned with the planning of plot size, are given only aggregated for the whole of the scheme. As stated, the New Garden Town scheme is not uniform: large plots are to be found in the oldest part of the scheme, while the area below the main boulevard is characterized by smaller plots. Besides this, the youngest part, first belonging to the Model Town Society, and with exceptionally small plots, was not included in the first plan. Thus it is to be expected, that compared with the original plan the smallest plots will be heavily overrepresented. Indeed this is the case. Strangely enough however, even then the number of 5 Marla plots is below the originally proposed quantity.

Compared with the original proposals, the average plot size in Model Town in the definite plan is larger than proposed, and even then, plots were joined together. Now, almost 50 years later, the plot sizes in Model Town have been much decreased. This is mostly due to subdivision. This is allowed in the regulations of the Model Town Society, as long as plots stay larger than 1 kanal. Nowadays, however, plots smaller than 1 kanal are present too.

Table 7.5: Comparison of planned and realized plot size in New Garden Town (flats excluded).

	Planned		Realized
Plot size	% of plots	% of area	% of area
5 Marlas	32.0	5.7	3.6
7 Marlas	4.0	1.0	10.7
10 Marlas	12.3	4.4	12.9
1 kanal	19.4	13.8	49.3
2 kanals	16.3	23.2	20.4
4 kanals	11.6	33.2	3.2
6 kanals	4.4	18.8	0
8 kanals			

Table 7.6: Comparison of planned and realized plot size in Model Town.

Plot size	Planned		Realized
	% of plots	% of area	% of area
5 Marlas			
7 Marlas			
10 Marlas			2.2
1 kanal			24.0
2 kanals	22.8	9.9	51.0
4 kanals	24.7	21.5	4.9
6 kanals	52.5	68.6	15.3
8 kanals			2.7

Table 7.7: Distribution of plot sizes per scheme

Plot size	New Garden Town		Model Town Extension		Model Town		Total area	
	Number of cells	%	Number of cells	%	Number of cells	%	Number of cells	%
5 Marlas	10	4	0	0	0	0	10	1
7 Marlas	30	10	5	2	0	0	35	4
10 Marlas	36	13	88	37	8	2	132	15
1 kanal	138	50	60	25	88	24	286	32
2 kanals	57	20	48	20	187	50	292	32
4 kanals	9	3	19	8	18	5	46	5
6 kanals	0	0	0	0	56	15	56	6
8 kanals	0	0	0	0	10	3	10	1
Flats	8	3	21	9	5	1	34	4
total	288	100	241	100	372	100	901	100

Table 7.8: Distribution of plot sizes per block (number of cells).

Plot size	Tariq	Aur.	Atta.	Aib.	Sher.	L	M	N	K	D	E	Park	Total
5 Marlas	5	0	5	0	0	0	0	0	0	0	0	0	10
7 Marlas	9	0	12	0	9	1	4	0	0	0	0	0	35
10 Marlas	18	1	9	1	7	29	59	0	0	5	3	0	132
1 kanal	15	46	34	21	22	15	23	8	14	45	42	1	286
2 kanals	19	18	0	10	10	17	8	1	22	105	81	1	292
4 kanals	0	0	0	6	3	0	0	0	19	12	6	0	46
6 kanals	0	0	0	0	0	0	0	0	0	29	27	0	56
8 kanals	0	0	0	0	0	0	0	0	0	6	4	0	10
Flats	0	0	0	4	0	0	0	21	0	2	3	0	34
Total	66	65	60	42	55	62	94	30	55	204	166	2	901

When surveying the plot size at the level of the study area as a whole, (table 7.7 and 7.8, map 15), it becomes clear, that the larger plots are to be found in Model Town. In Model Town Extension most plots are of 10 Marlas and one kanal, with the smaller plots almost missing, which is contrary to the stated wish to reduce plot sizes. New Garden Town can be divided into two parts again. The older part with more plots of one kanal, and the younger part with plots of 10 Marlas and smaller. It is quite obvious that according to its plot size K-block belongs to Model Town. Facade building is manifest in New Garden Town and Model Town Extension. All the larger plots are located along the main roads.

A last phenomenon to be mentioned here, is the presence of Katchi Abadi dwellings in the schemes. For a novice in the Third World, it is striking that in residential schemes, planned for the upper classes so many squatter buildings are erected.

In the schemes they are completely accepted however. On many plots that will probably lie vacant for some time to come, squatters erect their homes. These people play an important role in the functioning of a scheme. In the early days of a scheme, they provide nearly all daily services and facilities. They can exploit kebab- or chapatti-stands, they can provide fresh milk by herding some cattle, they can get a job as a servant in the scheme etc. Later on many of their tasks are taken over by the "regular" sector: shops and governmental services. Yet they continue to provide "special services": e.g. the provision of fresh milk. In all the schemes Kacha's are present (map 17), albeit less in New Garden Town.

A few spots, categorized on the map as "Kacha" can be discerned from these: the semi-pucca dwellings. These are clusters of low income houses, the difference with the Kacha's being, that the semi-pucca's are deliberately planned and the Kacha's are per definition spontaneous. Three clusters of semi-pucca's are present on the outskirts of Model Town. They were erected shortly after independence as a refugee's colony. These 3-Marla (=60sq.m.) dwellings have to be rented from the Government of the Punjab at the cost of RS. 200 a month. The second cluster of semi-pucca's is located in Model Town K-block. These were built in the '60s, are as large as the former (60 sq.m.), and cost slightly less. They are property of the Model Town Society and most residents are employed as servicemen at the Society. The last group has arisen round a pre-partition cluster of small dwellings. It is to be found on the intersection of the three schemes. People have constructed their own houses here, and do not have to pay any rent. The dwellings vary in size, but most are approximately 2 Marla.

Chapter 8 Socio-economic characteristics

8.1 Planning

Implicitly a very specific image of the designated future population of a scheme, is assumed in the various planning-documents. It is stressed already, that planned schemes are designed for the social group with a Western lifestyle. This appears e.g. from the fact that all schemes are based on the site-and-services principle, while inducing the bungalow idiom via the building regulations and the lay-out plans. The bungalows must be inhabited by a car-based population, which also has air conditioners, refrigerators and servants available, to overcome the disadvantages of the idiom.

It is disappointing to notice, that only one aspect is formulated explicitly. This aspect is income. Other characteristics (such as family size, socio-cultural background, preferences of the target group) are evidently thought of as unimportant or too complicated. Still these aspects can play a dominant role, in turning a scheme into a success or a failure. There above, income is only connected with simple plot size.

Table 8.1: Income-distribution in Lahore.

	income		% of households	% of households (cumulative)
	Annual (1000 rupees)	Monthly (100 rupees)		
Lowest	<=5	<=4	30	30
	5-10	4-8	30	60
Low	10-20	8-17	22	82
Middle	20-30	17-25	10	92
	30-50	25-42	6	98
High	>50	>42	2	100

Source: LUDTS, 1983.

Table 8.2: Affordable plots for different income groups.

Income group	% of households	Affordable size of plot
Lowest	60	-
Low	22	<= 3 Marla
Middle	16	5-10 Marla
High	2	>= 1 kanal

Source: LUDTS; 1983.

Table 8.3: Prices of plots, including dwelling to be built (in 1,000 rupees).

Size of plot	Model Town	Model Town Extension	New Garden Town
1 kanal	1,200	1,000	1,400
10 Marla	-	600	800
5 Marla	-	360	500

Source: data obtained from real estate brokers.

When comparing tables 8.2 (affordable plots per income group) and table 8.3 (price per plot), it can be concluded, that it is implicitly assumed by LDA that people must spend up to 80% of their income on housing!⁵² When comparing the LDA figures about affordable plots, with monthly rents the situation becomes even more ridiculous. In table 8.4 the monthly rents to be paid for different plots, (obtained from a real estate manager survey), are compared with monthly incomes, as given by LDA. According to the LDA-formulations of the target groups of the schemes, people must be able to spend on average more than 100% of their income on housing. How LDA conceives this situation the story does not tell!

The only justifiable conclusion is simple. LDA-policy is based on quick- sands.

Table 8.4: Comparison of portion of income to be spent on housing according to LDA, and prices of plots in the study-area.

Size of plot	Monthly rent	Average monthly income for target group, according to LDA-standards
1 kanal	4500 rupees	>= 4200 rupees
10 Marla	3600 rupees	3300 rupees
5 Marla	2000 rupees	2100 rupees

Source: LUDTS; 1981; survey by the authors (see table 8.3).

At this point a short sidestep can be made, to give an explanation of these land values. In the first place, the values obviously correspond with the statements made in paragraph 3.5 on land acquisition. More explicitly related to the three schemes in the study area, are the statements of several estate managers on the pattern of land values. New Garden Town is nearer to the city than the other schemes and hardly any empty plots are available anymore. Prices have therefore stabilized on a fairly high level.

Model Town by now follows in the same direction. After the new development started some years ago, prices have increased rapidly. (Of course many plots were bought in earlier days at cheaper rates.) Model Town Extension is at the beginning of this "planned scheme life cycle". Prices are still at a relatively low level.

Table 8.5: Target groups of schemes in reality.

Plot size	Income group for which affordable according to LDA-standards	Presence of plots in scheme (% of plots, as planned)		
		Model Town	New Garden Town	Model Town Extension
>=1 kanal	High	100%	62.6%	5.6%
5-10 Marla	Middle	-	7.8%	94.3%
<=3 Marla	Lower	-	-	-

It is clear from tables 8.1 - 8.5, that only Model Town Extension can be said to have been designed for the middle income groups. The other schemes are almost exclusively meant for higher incomes. Model Town Extension is the only scheme that partly fulfils the promises of both the Lahore Urban Development and Traffic Study (1981) and the PC-1's. The former says e.g. "A majority of the plots should be reserved for

the low-income group, this meaning plots of 10 Marla's or less." ... "Since 1975, when LIT transformed into LDA, a definite and steady shift in policy has taken place with the increasing awareness of the need to shift the benefits of public investment in favour of the low income groups."⁵³

Notice by the way that this statement is in flagrant contradiction with table 8.2 (source: the same LUDTS!), where it says that only plots of 3 Marla's and less are affordable for the low incomers! Notice also that the "low-income group" consists of people in the upper strata of the income- range! Some sixty percent of Lahore's population, earning less than 10,000 rupees annually, is classified as "lowest".

The PC-1 of Model Town Extension says:⁵⁴

"It is proposed to cater mainly the lower and middle income groups." "The design features are therefore, in commensurate with the income structure of the metropolitan area because a predominant majority of plots have been provided for the lower and middle income groups. As regards income structure for the city of Lahore according to a socio-economic survey conducted in early 1962 [!] 75.72 % of the households in Lahore had an income up to RS. 200 per month; 20 % fell within the range of RS. 200-600 per month; and 4.36 % earned RS. 601 and above per month. Thus nearly 96% of households in Lahore had an income of less than RS. 600 per month. Although the income structure has changed considerably it nevertheless proves the fact that the majority of the households within the metropolitan area of Lahore belong to the lower and middle income groups.....The plots for independent single family housing units with predominantly smaller sizes will copy with the requirements of the lower and middle income groups for which they have been provided." ... "Keeping in view the income groups, the type and category of plots provided it would be seen that every effort has been made in designing the lay-out to ensure the highest and best use of land in order to the maximum needs of the largest group."

When summarizing the different policy documents, it is clear that a kind of Grand Canyon exists between the different policy-statements. When the importance to cater to the needs of the lower income groups is stressed in most places, in others, (where the elaboration of policies comes to the forefront), these rhetorical balloons are pricked by the same institutions. Yet a move has taken place in urban planning from very large to medium- sized plots. Where the plots in Gulberg (dating from the LIT period) were on average 6 Kanal,⁵⁵ the future LDA schemes (Jauhar Town, Sabzazar scheme, Harbanpura-scheme, Muridke New Town and South Jauhar-scheme) will all have an average plot size of 10 Marla.⁵⁶ It must be stressed however that with still booming land prices even for the upper middle class a 10 Marla plot will become unfeasible! Striking is that only the Gujjarpura-scheme, for which a special action plan was drawn up in the Lahore Urban Development and Traffic Study (1981) has an average plot size of only 5 Marla!

8.2 Development

In chapter 7, when plot sizes were treated, the real development in the schemes, as far as the aspect income is concerned, has already been depicted. But not only the factor income is interesting and important, when evaluating the development of the schemes. Some others, mainly concerned with "lifestyle" or "family characteristics" were studied, by means of personal interviews, a standardized questionnaire and by the very technique of geography: observation.

The place of birth of the residents of the schemes is diverse. Slightly less than half of the people is born in India, (the so-called "Mohajirs"). One third is born in the (Pakistani) Punjab, (but outside Lahore), and 1/5 in Lahore itself. Twice as many people originate from urban settlements as from rural settlements. Between the schemes only slight differences exist.

In Model Town the proportion of Mohajirs is considerably higher. The reasons for this have already been described.

Nearly three quarters of the total population has moved to their present-day residence from elsewhere in Lahore. Interesting is the score of the group that moved in from outside the subcontinent, in Model Town Extension and New Garden Town. These people are mainly Pakistanis who have worked abroad, in the Gulf or in Europe. (One Afghan refugee, residing in New Garden Town formed part of this group too; what is to be understood by the word "refugee" remains in doubt!)

Naturally a fairly big differentiation exists between the three schemes, where the period people have lived in their respective schemes, is concerned. In Model Town the average is app. 15 years. In New Garden Town the maximum is 15 years (i.e. from 1970) and the average is only 4 years. As the scheme dates from 1968 these figures are significantly lower than might be expected. Two explanations for this phenomenon seem to be of equal validity. It is certain in the first place that it takes a long time before a planned scheme is completed. In the second place people seem to change residence quite often before they finally settle. Indications exist that this has more to do with changing financial than social circumstances. Still the first factor seems to be the more important as the average age of the dwellings in New Garden Town is also only 8 years. In Model Town Extension, more than half of the residents had moved in less than one year ago.

Prudently the proposition is put forward in this place that the factor lifestyle is influenced quite heavily by the existence or non-existence of family members living abroad. Two thirds of all the families has at least one of these! In Model Town their proportion is highest and the share of the USA therein is much higher than in the other schemes. In Model Town Extension and New Garden Town the Gulf is a more important location for "overseas Pakistanis". Reflected in the respective locations of these family members abroad is their occupation. In (very) broad lines: people in the Gulf have blue-collar jobs, in Europe and the States white collar. The fact that thus in many families an additional source of income is available may partly explain the anomaly noticed earlier, namely that costs of living may rise above nominal income.

Lifestyle ("modern" or "traditional"), is also reflected in the treatment of servants. In the traditional upper class quite a large number of servants are kept, and these live on the plot or in the house where they serve. The nouveaux riches have fewer servants, and those they do have, live somewhere else. Together these factors make a striking difference between the schemes. Although in all schemes 2/3 of the families has one or more servants, the average number in Model Town is nearly 2½, and in Model

Town Extension and New Garden Town only 1½. In Model Town these live on the plot, in New Garden Town the situation at this point is approximately 50/50, in Model Town Extension they do not live on the plot. In this way it is seen that a reduction of plot size, to serve the lower classes, can have the opposite effect: where these classes could live on large plots as a servant in earlier days, they have to take refuge in nearby Katchi Abadis in new schemes!

Also in the factor income, Model Town is different from the other schemes. The average income in New Garden Town lies around RS 7000 a month, in Model Town Extension it is slightly less, but in Model Town

it is app. RS 9000. More important, is the conclusion that in all schemes the average resident belongs to the upper class. (According to LDA-standards,⁵⁷ people with a monthly income of more than RS 4200 are within the high income category.) The spread around the average gives more detailed information on the percentage of residents of the schemes fulfilling this requirement.

Table 8.6: Average income in the study-area. (Rupees)

	Model Town	New Garden Town	Model Town Extension
Minimum	2,000	3,000	2,000
1 st quartile	4,750	5,000	4,875
Median	8,000	6,000	5,750
3 rd quartile	10,000	10,000	8,375
Maximum	25,000	15,000	20,000

Source: Inquiry by the authors.

Table 8.7: Income in the study-area; mean = 100.

	Model Town	New Garden Town	Model Town Extension
Minimum	22	28	45
1 st quartile	53	69	75
Median	89	82	90
3 rd quartile	111	119	149
Maximum	278	284	223

Source: Inquiry by the authors.

The warning must be repeated here that figures such as these must be handled with care. Figures on income are dangerous in every study, but are more dangerous in a country such as Pakistan and are very much more dangerous when they are based on a fairly small scale questionnaire! Yet the figures seem to give a reliable indication that in every scheme not even a quarter of the population belongs to the middle class! This figure can even be floated as the question was posed to the family member with the highest income only, while in many families more members earned money. The income distribution in the schemes is very lopsided, most so in Model Town. In both Model Town and New Garden Town 1/3 of the residing families has an (extra) source of income due to the possession of agricultural land. In Model Town Extension there are scarcely any landlords (only 5%). A reliable indication of the size of this additional income cannot be given. It may be taken for granted however, that these sums can be very diverse. As important as the economical, or financial aspect of this, is the social aspect. Many of these people still think of themselves as landlords, act alike, and are treated accordingly!⁵⁸

No large differences exist between the schemes in the expense-pattern.⁵⁹ On average a lot of money is spent on, according to Dutch taste, "floated consumption". Almost all families have a car, and in nearly 50% of the dwellings a video can be found. In New Garden Town and Model Town Extension a higher proportion of the monthly income is spent on luxury and consumer goods. A different, but interesting aspect deals with the reading habits of the residents. In the schemes app. 2 1/2 newspaper or magazine is

read per family. The interesting corresponding Urdu/English medium-ratio (an indicator of lifestyle!) is in Model Town 1.3, in Model Town Extension 1.6 and in New Garden Town 1.7.

Another aspect is concerned with the opinion the inhabitants have on their respective schemes. Although encountered in every research on this topic, it is still striking that people value their own scheme highest. In Model Town, which is also valued high by the people in the other schemes and in a control group, this is with an overwhelming majority. Some 90% of the respondents, living in Model Town, prefer their own scheme to the other possibilities given, Model Town Extension and New Garden Town and further Gulberg (the best equipped scheme), Shadman (close to the city centre) and the Cantonment (most prestigious). In Model Town Extension this majority is relatively small.⁶⁰ And yet it is a majority, although this scheme is valued very low by all others!

The factor distance to the traditional city centre, is not considered important in evaluating the specific schemes. Probably the centres of Westernism (Gulberg) are preferred to these traditional centres (Anarkali and Walled City). Personal reasons (such as the presence of relatives), is the most important factor influencing the first choice residential area. In Model Town the existing facilities and especially that it is a "good", "clean", "neat", "quiet", "healthy" and "well-planned" locality are appreciated.⁶¹ New Garden Town is favoured because of a combination of location (relatively nearby Liberty Market) and "locality" (well-kept, well-equipped with facilities and quiet). The reasons to prefer Model Town Extension are of the "I am already living here"-type. A minor reason is that it has a uniform social standing. "One knows exactly what kind of people to expect here."⁶²

It seems to follow from the above, that people are reasonably content with their own schemes. This proves to be the case indeed. In Model Town nearly everyone is content with his own scheme. Only two complaints can be heard: Model Town is too far from the city, and it is getting noisy and dirty.⁶³ In Model Town Extension 1/3 of the inhabitants has reasons not to be content. The distance to the city, lack of basic amenities and the enduring unfinished state of the scheme are the complaints most heard. Of New Garden Town the same account can be made. Here especially the bad state of the inner roads is a continual source of distress. It is also found to be dirty and congested. One inhabitant had a particular reason to be discontent: "I have recently applied for a telephone connection, i.e. 18 months ago."⁶⁴ One other obviously had a geographical talents. He commented on a question about his preference of living that "planned schemes are the same everywhere".

Several conclusions can be drawn from these socio-economic characteristics and the role they play in the planning of the schemes. It is obvious that, although differences between the schemes have been stressed, they are in fact quite uniform. Only minor differences do exist. It seems that the population of this part of Lahore, is typical for the "planned scheme population". Its most important characteristics are, that they belong to the upper-middle class and have a western or western-imitative lifestyle.

Chapter 9 Facilities and services.

9.1 Planning and development of public facilities.

Water supply.

The basic framework for piped water supply in Lahore was laid by the British. In the 1920's a water storage and pumping station was built at the highest point inside the Walled City. The LMC was responsible for the water supply, in 1967 the LIT took over, and in 1973 a public agency known as the WASA was created within LDA.

The whole system has steadily expanded. Nevertheless 40% of the population of Lahore has to do with water from private wells, stand pipes and by hauling over long distances. Served by piped water, are mainly the new housing estates developed by LIT and LDA. Model Town Extension and New Garden Town are thus fully covered and connected with the public water system. Model Town is self-contained in this respect. It has its own tube-wells. For the system as a whole, it has been estimated that 50% of the total supply is lost through leakage (LUDTS 1981).

Sewerage and drainage

The present drainage system was initially designed in 1937. Nowadays WASA is responsible for this public facility. In Model Town the responsibility lies at the Society's.

The flatness of the ground and periodic river floods are important obstacles for the drainage of the city. Waste water and runoff are discharged into the river Ravi, and a flood protection levee has been built to the north and west of the city.

Effluents are pumped across the bund whenever necessary. Parts of the city have open drains and arrangements for collection of night soils. The sewerage is used partly for irrigation, the rest goes directly and untreated into the Ravi. (It is said that without regulation of the river's discharge, the bed of the Ravi would be dry to the north, but normal to the south of Lahore, only due to the effluents of the city!) Overall, the development of drainage and sewerage has been slower than most other public services. Every rainy season brings large areas of the city under pools of stagnant water.

The newer schemes all have sewerage connections. In Model Town most of the waste disposal takes place via septic tanks and seeping drains.

Solid waste collection and disposal

The Lahore Municipal Corporation is responsible for this facility. In the schemes collecting points are planned, but most of the solid waste is collected at unofficial points or just spread around (see map 18). Many scavengers are active to sort out all sorts of waste which can be re-used in some way or another. Maybe this is the salvation of the LMC, which by itself would certainly not have enough capacity to take care of it. Yet this capacity could be increased dramatically, if solid waste collection would get a higher priority at LMC. (Higher for example than the removal of leaves from roadsides and lawns.)

Electricity

WAPDA was created in 1961 to promote the development and management of water and power resources of Pakistan. WAPDA has expanded the electricity-generating capacity and built a countrywide transmission- and supply-grid. Lahore is served from this national grid and obtains its bulk supply from Tarbela- and Mangla-dam.

Electricity-supply has five times increased since Independence, but a large proportion of the local population still has to do without. In 1979 about one-third of the houses in Lahore were connected. In the study-area this percentage is almost hundred. Except in times of load-sharing,⁶⁵ electricity is said to be available more or less regularly for 24 hours a day.

In Model Town the Model Town Society buys its bulk from the WAPDA, and distributes electricity itself. The inhabitants must pay their electricity bill to the Society.

Gas

The provision of piped natural gas as a fuel, is a new feature in Pakistan. In Lahore gas became available in 1965, some years after the discovery of a large gas field at Sui in Baluchistan. Since then the supply has expanded tremendously. Gas is provided by a semi-governmental organisation. In the study area every house is connected to the system. The need for the provision of natural gas in Pakistan can be questioned however. Gas is not necessary on a large scale for the heating of dwellings. Thereby culinary habits imply that individual households do not use very much gas for cooking. It would have been cheaper, easier and more efficient, to maintain only one network for the provision of energy: electricity. Only two aspects plead for the supply of gas to individual households. In the first place natural gas is found on a fairly large scale in Pakistan. In the second place gas is in general a heating medium that is more efficient and cheaper than electricity. Apparently these aspects are important enough for the government to build and maintain two separate networks.

Public transport

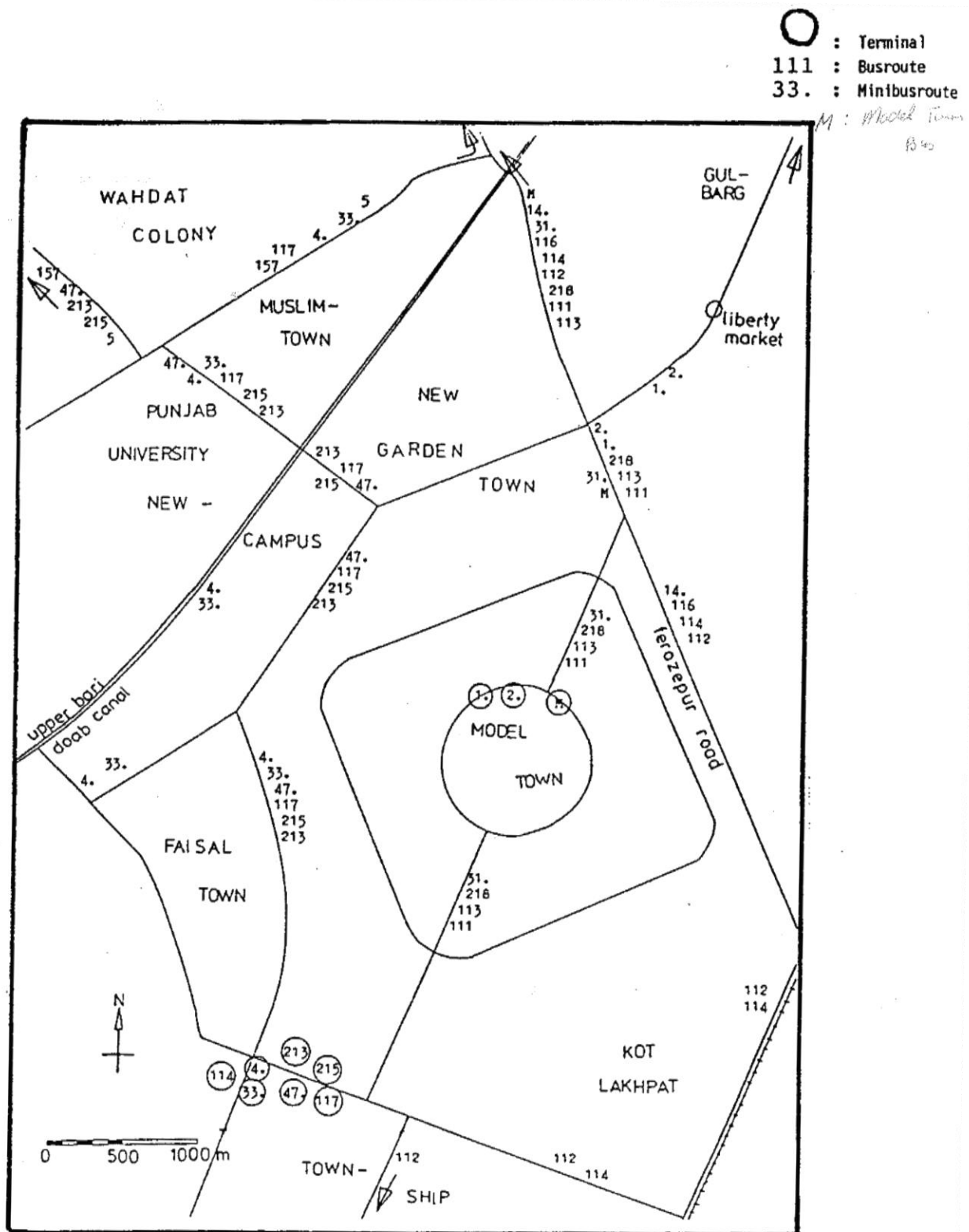
Public transport is provided both by the public sector (PUTC-buses), and the private (minibuses, Tongas, taxis, rickshaws and buses). The latter are more or less under the control of the provincial and regional transport authorities. The importance of public transport appears from the fact that half of all the trips to the central area are made by means of public transport.

The PUTC (Punjab Urban Transport Corporation) was set up in 1977 and is under control of the Federal Government. Before its predecessor, the Lahore Omnibus Service, had a monopoly within the metropolitan area, but because of inadequacy and the pressure to provide more and better facilities, private operators had to be allowed to serve certain routes in the north-east of the city with buses, and the whole of the city with minibuses as well.

Qadeer (1983) remarks that the steady decline in quality of the local bus services, means that it has become the transport medium of the poor. As a consequence minibuses became an element of the transport system for slightly higher social strata. Yet this is not a guarantee for very much comfort. Minibuses are often overloaded too. (More than 30 people can be transported in one minibus (Ford Transit), and consequently are transported in this way quite regularly.)

The increasing size of the city, is contributing to a constantly growing demand for public transport. This demand is much higher than the physical growth of the city necessitates: the locational dispersal of public agencies, clan and filial obligations (Lahore being the city of personalized dealings), the separation of home and workplace, and the typical layout of newly planned residential schemes have resulted in a disproportional and largely unnecessary growth in the demand for public transport (Qadeer 1983). In the LUDTS, two main problems are reviewed. In the first place, the crowding of public vehicles during peak hours and secondly, the large subsidies required by the PUTC.

Fig. 9.1: Bus and minibus routes in the vicinity of the study area.



This inefficiency of the PUTC can be illustrated in a few sentences (LUDTS 1981): The PUTC possesses 500 buses, which were in 1981 5 years of age. In the early morning only 60% of these buses are on the road, in the afternoon this percentage has been lowered to 40%. Per bus owned, 7 persons are employed, and per bus running even 12 persons. Although overloading, the PUTC collects in revenues less than half its costs. The staff and institutional framework (a large public monopoly) can be blamed for this. The minibuses drive the same routes as the PUTC-buses and have the same stopovers. This improves the effective service frequency, the level of comfort for the passengers and the competition. The problem is that there are too little minibuses. Yet there is an official policy to restrict their growth in number (LUDTS 1981).

LUDTS, acknowledging that abolition of the PUTC and taking over by private developers is politically not opportune and that driving with only minibuses will result in too much congestion, pleads for a (better) mixed bus system, with a more liberal policy towards private operators. The bus and minibus routes in the immediate neighbourhood of the study area are depicted in figure 9.1.

Dispensaries, clinics and doctors

With the advent of the British a sharp break with the traditional medical system occurred. The old educational institutions, the traditional medicines and the historic curriculum were quickly displaced by a number of modern institutions, indicative of the dispatch and design with which the British proceeded to transform the social order in Lahore and colonial India as a whole. Modern institutions and practices drove the traditional facilities and services into private and voluntary realms. The dualisation of education and health into an upper and recognized modern circuit, and a lower and unofficial traditional circuit is thus a noteworthy consequence of British rule.

The number of schools, colleges and hospitals has continued to increase with the expanding population, especially since Independence. A two to ten times increase in education and health facilities can be recorded. It brought these services, to varying degrees, within the reach of about 60-70 percent of the population. Yet these gains have not resulted in a noticeable improvement in the quality of life in the city or of individual satisfaction levels. Expectations have risen more rapidly than satisfaction and new needs arose as the city grew. Also the operational shortfalls, resulting from policies and procedures adopted, have resulted in a lesser yield than expected.

Paradoxically, community facilities worked effectively as long as they were meant for a select group. With their expansion, the quality declined and the usability eroded. The result is that the hardships of the poor are seldom reduced, while the privileges of the rich cannot be taken for granted anymore.

Generally, the new and higher income residential areas are better served than the old and lower class neighbourhoods. The phenomenon of floating up appears vividly when examining these services: public improvements in the provision of services tend to split up and to cater to private preferences of select groups only. The rich rely on private clinics, and ordinary people line up outside public hospitals: medicines must be bought from the market, specialists must be consulted in the evening hours at their private clinics.

The director of the Sheikh Zayed hospital, a governmental hospital in New Muslim Town (a gift from the ruler of Dubai), draws the same picture: the main advantage of the private clinics is that they are closer to the place of residence and have shorter waiting times. Their specialists work in daytime in the governmental hospitals because they are obliged to do so. When, after consulting a private clinic, a disease seems to be serious, most patients go to governmental hospitals.

In Sheikh Zayed hospital 60% of the patients belongs to the low income group. This percentage will be much higher in the other governmental hospitals, as Sheikh Zayed hospital is quite new, has relatively high fees and is located in the planned area of the city.

Education

Despite the leading position of Lahore in the provision of educational facilities and the progressive increase in the number of schools, it has become a parent's nightmare to find a decent school for their children and to get them admitted.⁶⁶ Admission proves to be hardly possible in the about fifty schools with the distinction of being 'large' or 'reputed'. At the Central Model School's admissions day for example, microphones and loud speakers were used to guide the flood of parents, and the chairman desperately locked himself up in his office. The result of this all, was a number of 1,700 applications for 300 seats. Bribery grows into a necessary routine in this way.⁶⁷ Other reputed schools are only open for influentials or family members, registration must be done 4 to 5 years in advance and not refundable registration fees have to be paid.

The LMC only spends 16 lakh of rupees on the education of 11 lakh students (an allocation not even enough to buy a year's supply of chalk; Qadeer 1983). The municipal schools have steadily declined in quality and service. Only lower class families visit the school; better schools are too expensive and too far away for them.

"If you can see a boy with a torn bag (or no bag at all), shabbily dressed in a black militia shalwar-kamiz, hair uncombed, hands and face spotted with ink, walking despondently, you can be sure that he is a student of a municipal primary school."⁶⁸

The quality of these schools is worse than of the private schools. This may be caused by the low salary of the teachers (Rs 450 a month⁶⁹), the bad organisation and the bad state of the buildings ("Their buildings have no main gates and are often used as cattle barns when no education is going on").⁷⁰ So abysmal are conditions in some municipal schools that often they cannot even attract the children of the poor, their normal clientele. For this reason admission is open all year (Qadeer 1983).

The quality of schools has thus steadily declined. This trend has persisted through all changes of government and resulted in an increase in the number of private schools. This trend was further stimulated by the Islamization of school curriculums.

Paradoxically on the college level, governmental schools are of higher quality than private schools. The result is that the better students (thus from private primary and secondary schools, and thus of the richer families) go to governmental colleges, whereas worse students must go to private colleges, which they cannot afford.

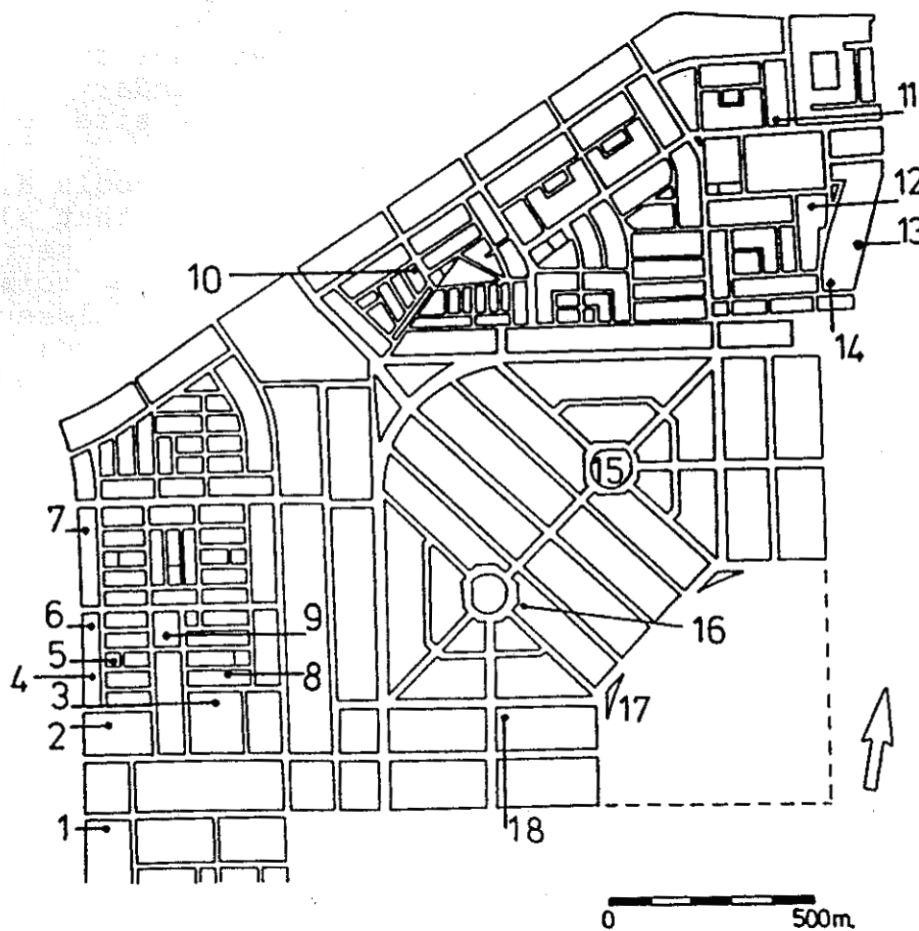
The result is a dualism, which militates against (a.o.) the neighbourhood principle. Streaming of educational facilities into different layers of diverse quality and curriculums does not lend itself to neighbourhood institutionalization.

The conclusion might be that as access to educational facilities for all strata of the society increases, their quality declines and a parallel stream of exclusive schools for the influential emerges. As a consequence it might be concluded that planners and developers pay little attention to the neighbourhood principle in everyday reality. In fact, planned schemes in general make no provisions for primary schools; planners must feel that the rich do not need municipal schools nearby (Qadeer 1983).

This planning-aspect also shows up in figure 9.3 on the planning of public facilities. In the study area 6 sites for schools were reserved. In Model Town the Governmental Model Girls High School (17, see figure 9.3) is located, in New Garden Town one site remains unbuilt up to now, while the construction of a school for the deaf and dumb (12) has started, and in Model Town Extension one site remains empty, one site is built over with a religious educational institution (9), while the last site contains a private school (5). So, in spite of the space reserved, no governmental primary or secondary schools are constructed.

Figure 9.2 displays the location of the schools as they have been built in reality. School 15 is held, as a substantial number of other municipal schools, in the open air. School 17 is the Governmental Model Girls High School. It has 4,500 students and the teaching medium is Urdu. Like other governmental high schools (but distinct of the governmental primary and secondary schools), it has a good reputation. Its pupils are attracted from the whole of Lahore, but are said to be of different income groups. This mixture is stressed: students must wear the same clothes and are not allowed to wear watches or ornaments. The students go to school by own convenience or by government buses (Rs 30 a month). The government rates are between 1 to 5 Rupees a month.

Fig. 9.2: Location of schools in the study-area (numbers explained in the text).



The other schools are private or public schools. They contain nursery- classes up to class 10, or less if the school has just started. Furthermore some schools only have nursery-classes. The number of students varies, ranging between 27 and 300.

Fees are also quite different. Most schools demand about Rs 250 a month. The Modern Nursery High school (18) has a rate of Rs 50 and even provides free education for the really poor people. The Public High school (14) has a fee of Rs 135, but this can be decreased to Rs 75 a month for the poorer people. Both schools make a good impression.

Generally spoken, the pupils are recruited from New Garden Town, Model Town, Faisal Town and Model Town Extension. Two schools have students from outside this area. These are the Public High school in New Garden Town, which also attracts students from Township, Wahdat Colony and Muslim Town due to its strong discipline and famous standard, and the Kimberley Hall School in Model Town Extension. The origins of pupils of this school are represented in table 9.1. The total costs per student at the Kimberley Hall School are indicated in table 9.2.

Table 9.1: Place of residence of students

Model Town Extension	59
Faisal Town	31
New Garden Town	29
Model Town	16
Iqbal Town	3
Township	2
Samanabad	2
Muslim Town	2
Gulberg	1
Total	145

Table 9.2: Students expenses of the Kimberley Hall School at the Kimberley Hall School.

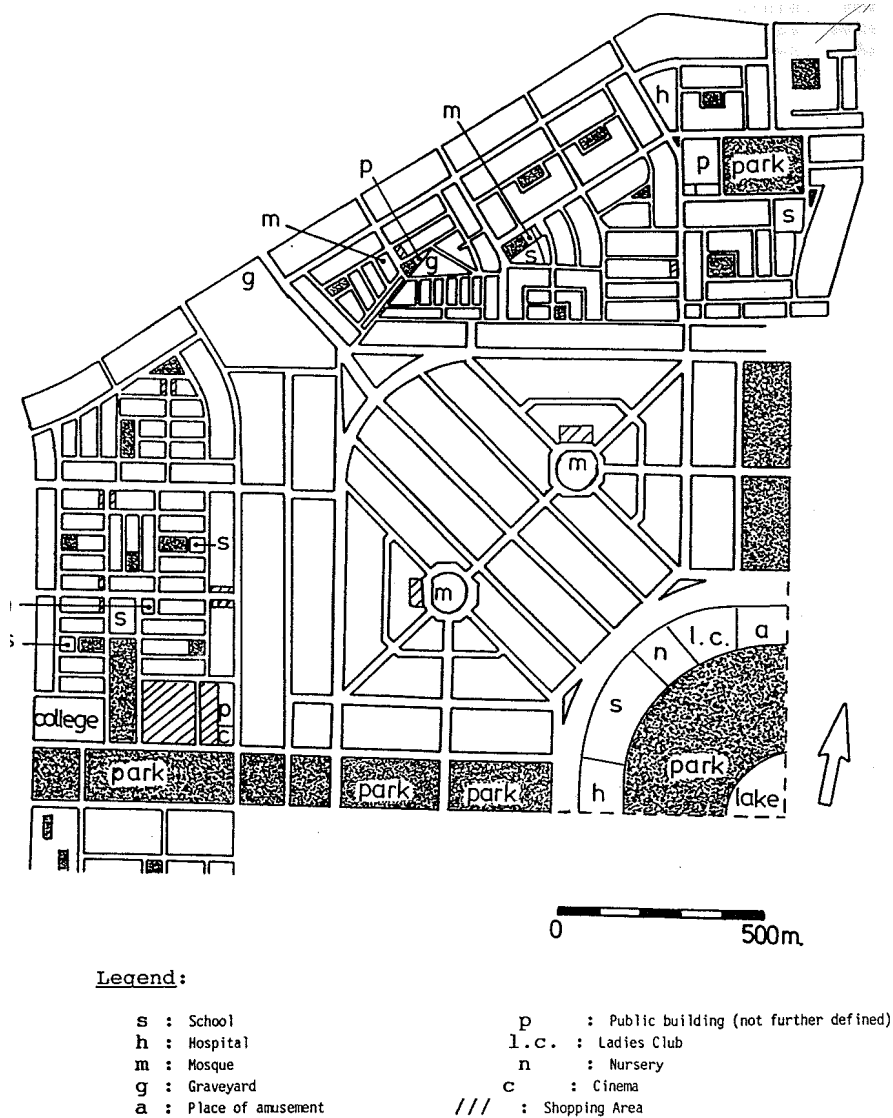
Registration	200
Admission	300
Security (back)	375
Fee card	5
Homework diary	15
Progress Report Card	10
Total expenditure (once a year)	905
Monthly fee	275

In nearly all schools, teaching is in both English and Urdu medium. Schools are more or less obliged to teach at least partly in Urdu. In 1987 all teaching officially had to be in Urdu, a step in the process of further indigenization. Only the Public High school and the Governmental Model Girls High school use Urdu medium, while the Nobel Grammar school (13) and the Kimberley Hall School only teach in English.

9.2 Confrontation of planned and realized public facilities

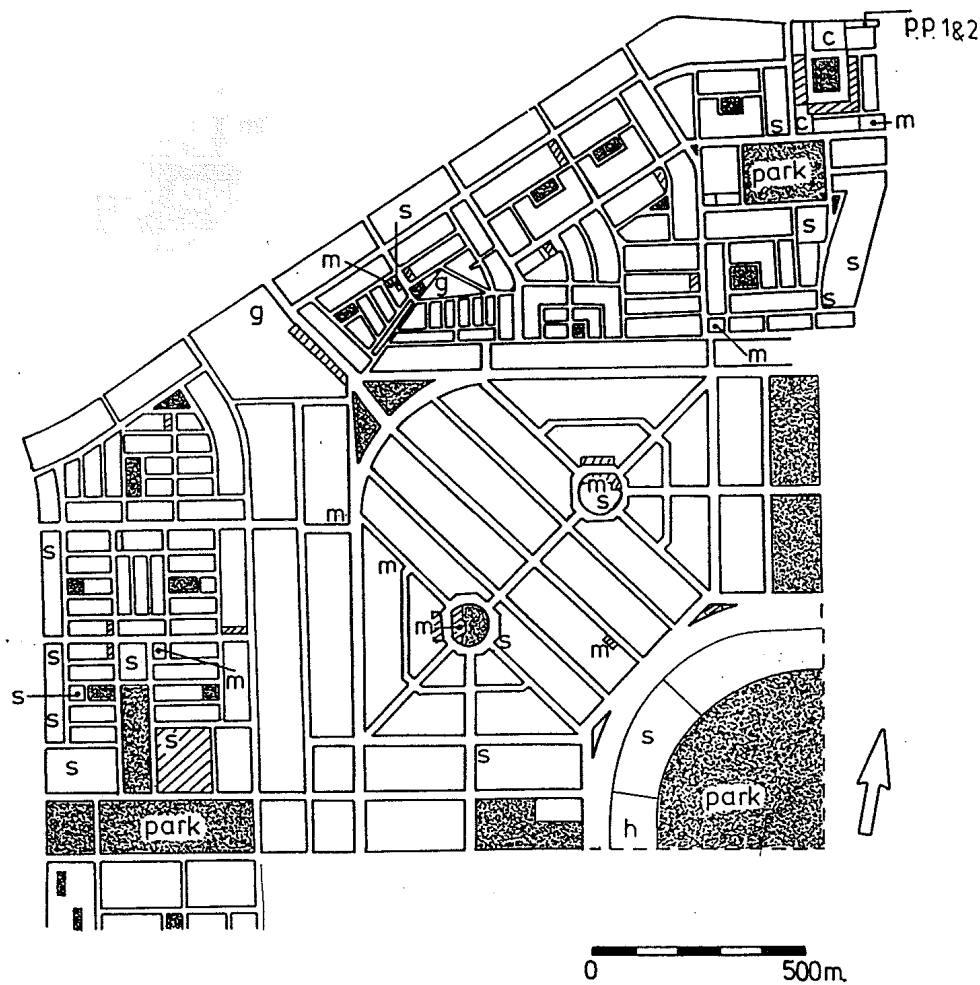
The location of the planned public facilities is indicated in the plans of the different schemes, and reproduced in figure 9.3, the location of the realized public buildings is registered in figure 9.4 and map 3 and 4. For Model Town the data used for figure 9.3 are retrieved from a map of 1951, used by the UN Economic Commission for Asia and the Far-East. Contradictory to the initial ideas of Khem Chand, shopping areas were projected in the centre of each block. These are realized nowadays. Also the hospital and the girls' school are realized, as well as the parks.

Fig. 9.3: Planned public facilities in the study area.



As can be observed in both figures there are some unplanned public buildings inside Model Town: two mosques, of which one is constructed on the plots, occupied by the flats, and two schools, one in the centre of D block and the other, the Model Town Modern Nursery High School, in a residential building.

Fig. 9.4: Realized public facilities in the study area.



Legend:

s : School
h : Hospital
m : Mosque
g : Graveyard

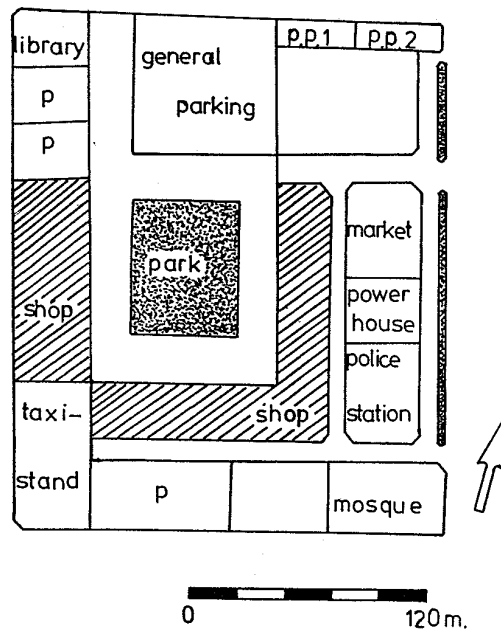
p.p.1 : Petrol Pump 1
p.p.2 : Petrol Pump 2
c : Car Parking
/// : Shopping Area

In Model Town Extension all the projected parks are realized or will be realized in the near future. All the planned shopping areas were already visible or under construction. This was not the case for New Garden Town. Yet Model Town Extension is in the first stage of commercial development, and as a consequence many commercial plots remain undeveloped up to now. The planned cinema has not been constructed up to now, while on the site for public buildings to the north of it, a women's social welfare centre emerges. The governmental college for boys is under construction, as is the mosque. This mosque belongs to the neighbouring Islamic teaching centre, which is an educational organisation with sections all over the world. This one is the parent institution of the organisation. It promotes Islamic teachings and gives orders

concerning values, attitudes and ethics towards other Islamic institutions in the USA, the Middle East and Northern & Western Europe. On the site some hostels for students are located too.

Besides these planned public facilities many unplanned ones are present in the Model Town Extension scheme. Along the road between Model Town Extension and Faisal Town quite a lot of schools are located in residential buildings, a school is located above the main shopping centre and educational institutions are located in the Faisal-flats. Also a large mosque is under construction in K-block.

Fig. 9.5: The planned public facilities in the main shopping centre of New Garden Town.



Despite or because of its older age, many aspects are not according to the original plan in New Garden Town. Only the two mosques, the graveyard, the school in Shershah-block and the parks are realized. Despite the plans for a market, a police station, a library and three undefined public buildings around the main shopping centre of New Garden Town, there is nothing here but grass, rubbish and emptiness (figure 9.4). On the other hand, many activities take place in New Garden Town that were not planned. At least five schools and a mosque can be mentioned.

Only two hospitals are planned, of which the hospital in Model Town is realized. Clinics and dispensaries are not planned for at all. It might be obvious from map 4 however that quite some private clinics are located in the study area.

9.3 The use of public facilities

Religious institutions

The inhabitants of Model Town Extension pay visits to the mosque in Model Town Extension, as well as to the mosque in Model Town. There above one third of them goes to a mosque in another scheme. The

behaviour of the inhabitants of New Garden Town and Model Town is different. About 90% of them visit the mosque in their own scheme.

Educational institutions

In New Garden Town and Model Town Extension 70% of the children is taught in English medium, in Model Town this percentage is a little lower, being only 50%. In Model Town Extension and Model Town about 40% of the children visit private schools, 40% visit governmental schools and 20% public schools. In New Garden Town these numbers are 40%, 30% and 30% respectively.

The children from all three schemes visit schools spread over almost the whole of southern Lahore. In Model Town about 50% visits a school outside Model Town, the most important schemes being Gulberg, Shadman and New Garden Town. In Model Town Extension only 5% attends lessons in Model Town Extension itself. Most children go to Model Town (30%). In New Garden Town 80% of the children goes to a school outside New Garden Town. In all schemes a certain percentage of students visits schools farther away, even on the Mall, on Multan Road or in the Walled City.

Medical institutions

When consulting a doctor, 60% of the people in Model Town, 40% of the people in New Garden Town and 25% of the people in Model Town Extension, stay within their own scheme. The people going to a doctor in another scheme, disperse all over the city. In Model Town Extension however, there is a dominant tendency to consult a doctor in Model Town. When visiting a dispensary, 80% of the people in Model Town acts in line with the neighbourhood-principle. In New Garden Town this percentage is 60%, while Model Town Extension was excluded, as it lacks any dispensary.

9.4 Planning and development of shopping facilities

LDA (Building regulations LDA, 1984) discerns a hierarchy of shopping centres in Lahore, consisting of at least four levels: the Central Area, divisional centres (Gulberg Liberty market), district centres and local centres. These local centres are also known as neighbourhood or mohalla centres. A district centre contains 150 to 200 shops, serves a local population of about one lakh people and is generally a commercial cum civic centre with facilities such as college, hospital, mosque, library, cinema and service station.

Applying this hierarchy on the scheme level, means that a main shopping centre or district centre serves a whole scheme, while at the boundaries mohalla centres and/or corner shops can be discerned.

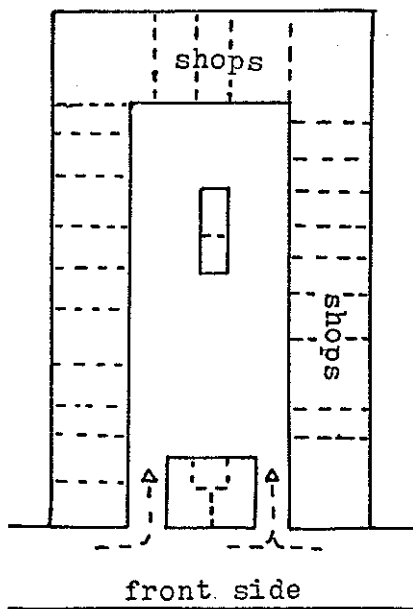
The LDA has developed building regulations for its commercial areas. Some of these regulations are valid for all commercial areas, while others are distinct for the four different levels. The building regulations relating to

1. proportion of site which may be occupied by buildings,
2. height of individual storeys,
3. side space,
4. arcades in front of shops,
5. advertisements,

are the same for all levels, while regulations concerning the height of buildings and the parking of vehicles are different for the four levels of shopping centres.

A new phenomenon in the last decade is the construction of "shopping plazas" on tracks of land with a high accessibility.⁷¹ On a small front a lot of shops can be built in this way (figure 9.7).

Fig. 9.6: A typical shopping plaza.



The existence of a consistent hierarchy of commercial activities is denied by Qadeer: Lahore is a city whose various sections were developed in different time periods, and were meant to serve separate social groups, economic functions and technologies. The result is a process of parallel, and not hierarchical commercial development in various sections of the city. The commercial markets and nodes are thus diversified by type of commodity and by the social standing of their customers. They are the territorial imprints of the multiple circuits and divergent modes of operation. As a consequence multi-purpose shopping areas will not exist (Qadeer 1983). Qadeer (1983) does discern another 'hierarchy' of commercial establishments. He mentions two basic forms of commercial development. First, strips of shop lined streets, radiating from the city's core and present along the main arteries of the older planned schemes. And second, nodes of specialized commodity markets, which are concentrated in the Walled City. According to this research a third form can be added: the planned shopping centres of the newer schemes.

Qadeer (1983) also discerns the so-called encroachments; hawkers, stallholders and other sidewalk purveyors of services and goods, constituting a distinct form of spontaneous commercialization, mainly serving the lower circuit and present in all parts of the city. The role of these is not taken into account by the LDA, when planning shopping centres in its schemes.⁷² Of course the LDA is not happy with these illegal shops, and knows that sanctions should be the consequence. Nevertheless, it stays careful: "the law should not be too rigid, and the livelihood of these persons should be guaranteed whenever possible".⁷³

Table 9.3: A hierarchy of commercial establishments.

What?	Where?
1. Milk, grocery stores, vegetable and fruit stands, tandoors, butchers –common needs-	Everywhere in residential areas
2. Fabric and general stores, tailors, druggists	Neighbourhood shopping strips
3. Specialized markets, which can be distinguished in indigenous versus modern	Walled City, Gulberg

Source: Qadeer, 1983.

Another form of spontaneous commercial development can be discerned. It can be called unofficial in the sense that it was not planned or approved by the LDA. It is formed by the conversion of residential bungalows into showrooms, offices and shopping plazas. This conversion proceeded incrementally, and essentially in defiance of the city's zoning by-laws (Qadeer 1983). LDA has reacted on this unofficial development by designating residential areas which may be converted into commercial areas. (Now at least it is not illegal anymore.)

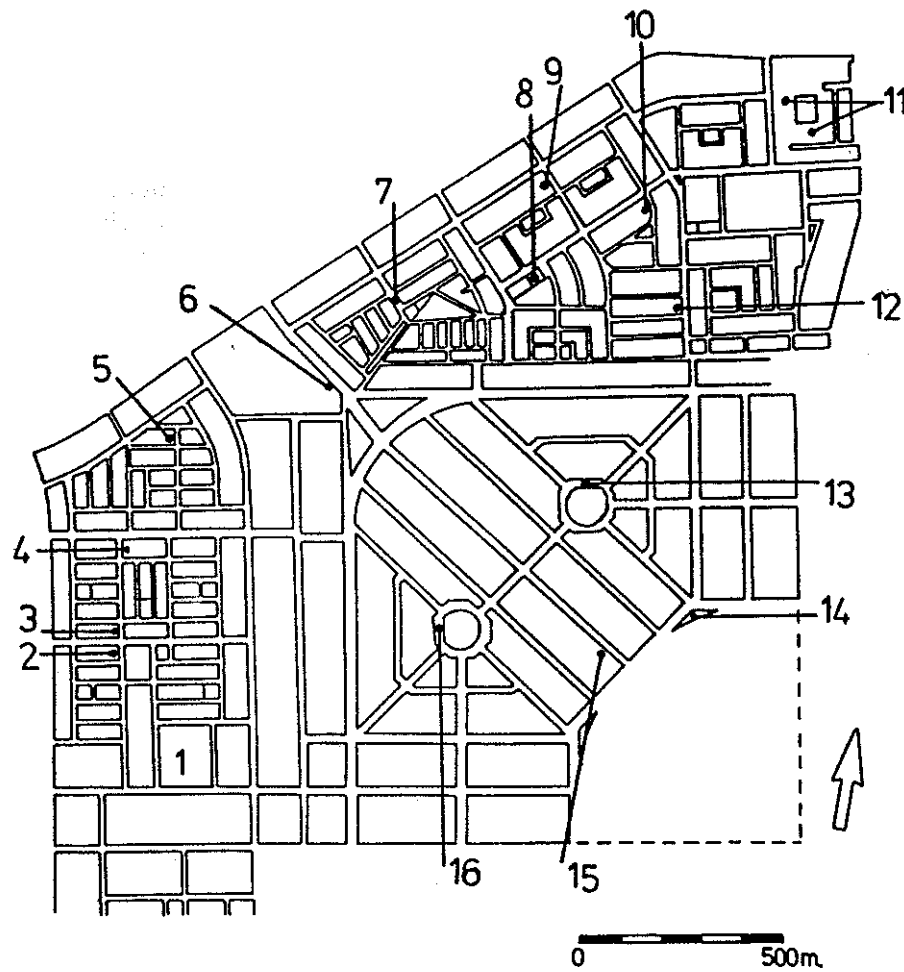
A survey of shops, carried out in 1962 by the city's planners as a background for the master plan, indicates that there were 31,286 shops in the city, yielding an overall ratio of one shop per 41 persons. This contrasts sharply with western standards, where a ratio of one store per 150- 300 persons has been used for allocating commercial sites. It would be logical to expect more persons per shop in poor countries where consumers have little to spend. Yet the situation shows the reverse. This is because of three factors: the scarcity of financial resources and materials, the surplus of labour, and the spatial organisation of the city (shops must be nearby to be visited). The conclusion might thus be that the number of shops decreases with the increasing of prosperity of a residential area. Most of the shops were food shops. Food is the most common commodity purchased in a city of poor. The more commercialized shopping areas have fewer food shops than the smaller shopping areas in residential quarters (Qadeer 1983).

As shown in figure 9.7 16 shopping areas can be discerned in the study area. These shopping areas consist of different collections of shops, as becomes clear in table 9.4. The low percentage of food shops in the main shopping centres of New Garden Town and Model Town Extension is manifest.

The shopping areas are of different levels and in different stages of completion. Especially in Model Town Extension most commercial areas are in the first stage of development, most plots being empty or under construction. Assuming that these areas will indeed reach their planned ultimate size, three levels of shopping areas can be discerned.

On the first level two district centres are present: the main shopping centres of Model Town Extension and New Garden Town, indicated with the numbers 1 and 11. Most of the other shopping areas are of the mohalla-level or will reach this level in the near future. Nowadays some of these areas, especially in Model Town Extension, contain just one or two shops. This is also the case for the commercial areas indicated with the numbers 8, 14 and 15. These will not develop any further and are thus of the third level, the level of the corner shops.

Fig. 9.7: Shopping areas in the study area (numbers explained in the text).



It is not easy to mark the range of the centres. This is partly due to the different kind of shops they contain. Of course, a specialized physician will have customers from the whole of Lahore, while a utility store will have a very small range. Furthermore, it was not possible to interview all the shop-keepers. After twenty five interviews with different shop-keepers in the 16 commercial areas, the impression arose that the shops are mainly dependent on customers living in the immediate neighbourhood.

Table 9.4: Functional structure of shopping-centres in study-area (numbers of shopping centres as in figure 9.7).

Shopping centre	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Food-stand						4	1		1		4	1	6			3
Soft drinks		1		1									2			2
Tea-stall													1			1
Ice-cream											1					
Restaurant											2					
Bakery	1										3					
Vegetables									1		2		2			1
Butcher/chicken									1		3		3			2

Shopping centre	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Utility-store	3	1	1	1	1	5	3	2	5		12	3	5	2	3	5
Copy-shop											1					
Videocassettes	4			1		4	1		3		13	2				1
Telephone office		1														
Audiocassettes											1					
Photographer	1										1					
Computer shop											1					
Electricity shop											3					
Household goods	1										2					
Hairdresser	1					1	1				3	1	1		1	
Beauty parlour											2					
Drugstore	1								1		5	1	1			1
Clinic							1		1		1		1			
Jeweller	1															
Gift-shop											4					
Toy-shop											1					
Reading matters											1					
Book-store	1										1					
Boot shop											2		1			
Outfitters shop	2						1				7					
Baby clothes											1					
Clothing											2					
Sewing gear											2					
Carpets											2					
Furniture											6					
Bank											1					
Office											2					
Broker	1					1		1			8					
Tent-service												1				1
Electrician						2					5					
Furnisher												1				1
Iron-monger						2										
Building materials						1							1			
Dye works											1					
Laundry											1		1			1
Tailor	5								1		12	1	1			1
Bike-repair						2							1		1	1
Car-breaker													1			
Vacant	*	*	*	*	*	1	5	6	15	**	147	2				*

Note: *=many; **=all

The policy of plot development of the LDA can easily be observed when looking at the construction of commercial centres. Empty plots, buildings under construction and completed buildings of different height and architecture can be discerned.

After constructing a commercial building, the constructor has the choice of selling the whole plot or of renting it (to one or more shopkeepers). It is not allowed to subdivide a commercial plot, by selling it to different shopkeepers. (Some constructors/owners misuse the illiteracy of many shopkeepers. They sell a shop (being a part of a commercial plot) to a shopkeeper, although this is impossible according to the bye-laws of the LDA. The shop is 'sold on ownership basis', so the propriety rights remain with the owner. Thus actually the new shopkeeper pays rent, while assuming he has bought the shop. After a certain period he will be asked for "rent" again...).⁷⁴

The shopping areas in New Garden Town and Model Town Extension are quite new, the oldest one in New Garden Town being 8 years old (no. 8), and in Model Town Extension 3 years old (no. 3). The prices of the shops fluctuate between Rs 125,000 and Rs 500,000 in New Garden Town and Rs 100,000 and Rs 420,000 in Model Town Extension.

The rent of the shops fluctuates immensely. The 'lowest' rent is Rs 700 a month and the highest Rs 1500 a month. Even the small utility stores in the neighbourhood centres have a rent of Rs 1,200 a month. The situation for the shops in Model Town differs from this picture. Here each commercial area has its own history. E-block started at the inner side about 16 years ago, while a few shops are about 5 years old. The shopkeepers rent their shops from the Muslim Trust, the owner of the land. The rent amounts to Rs 200 to Rs 300 a month. The outer side is much younger. It is partly undeveloped, some shops are under construction, while the oldest shop is about 4 years old. The shopkeepers constructed their own shops, but rent the site from the Model Town Society, for Rs 188 a month. In D-block all shopkeepers are also owner of their shop. The prices of the self-constructed shops are much lower than in Model Town Extension and New Garden Town. Before partition the land belonged to the 'Hindu temple', then it became evacuee property and later it could be bought from the government. The shops were constructed in the period 1962-1967. On the inner circular road two so-called corner shops are located. They are just one and two years old. The shopkeepers have to pay Rs 144 rent a month to the Model Town Society, but are owner of the building.

The presence and location of these shops is certainly not according to the original plans of Khem Chand.

In map 3 four kinds of commercial activities are discerned: shops, services with personal contact, services without personal contact and a rest group.

Different combinations of these commercial activities do exist in the study area. The number of non-planned commercial activities is striking. Besides two shops, this concerns mainly the services activities. An enormous number of insurance brokers, offices and wholesale traders are located in residential buildings. According to the evolutionary pattern of schemes as introduced by Qadeer, these are especially located in New Garden Town. The number of hawkers in the study area shows no significant differences between the three schemes. These were not to be expected either, as hawkers can react directly on changing demand-preferences.

Table 9.5: Hawkers in study-area.⁷⁵

	New Garden Town	Model Town Extension	Model Town
Vegetable	6	5	6
Fruit	6	0	2
“instant food” (e.g. sugarcane, maize, sweets)	9	6	6
Milk	1	2	3
Blankets, carpets	2	2	1
Balloons	1	0	1
Services	4	0	0
shoes	1	0	0

Chapter 10: outlook of the schemes

Several aspects combined produce the specific outlook of a scheme. To mention just a few: the size and type of dwellings, the number and state of public gardens and parks, the state and maintenance of "private" vegetation on plots and, last but not least, the eventual presence of "informal" aspects. Of this last category the most important examples in Southern Lahore are the presence of informal waste disposal depots, on literally every street corner, and the presence of cattle in the schemes. Most of these aspects have been dealt with already (e.g. housing characteristics). Two remaining will be treated in this chapter: vegetation and the presence of cattle.

10.1 Vegetation

Planning

Lahore used to be known as the city of gardens. The city earned this name through the famous gardens of Moghul legacy. The Shalimar Gardens have grown world famous. The British enhanced the heritage of the city by building more parks in the Cantonment and the Civil Lines. Although most of the large parks have remained untouched, the post-independence building boom has swept away many smaller open spaces. By 1980, many of these had been encroached upon by squatters or private entrepreneurs. After independence, land for parks and playfields was set aside in newly planned schemes. Also some prestigious complexes have been developed there. Therefore, open space is being used up in the old and poor section of the city, whereas new amenities are developed in the spacious, affluent new schemes: the evolving system of parks and open spaces in Lahore is a vivid illustration of the process of floating up (Qadeer; 1983).

Table 10.1: Allocation of parks in Lahore, as proposed in the Master Plan (1966).

		Peer 1000 persons (in acres)
Metropolitan and city level		
	Regional parks and forest areas	1.00
	Green belts and parkways	1.00
Divisional and district level		
	Divisional parks	0.20
	District parks	0.30
Neighbourhood and Mohalla level		
	Neighbourhood parks and playfields	0.75
	Mohalla playgrounds and children's play lots	1.75
Total (as minimum standard)		5.00

Source: Master Plan, 1966.

The standards that LDA adopts in the planning of its schemes have gradually risen.⁷⁶ LDA says "to follow the international standards (as it always does), yet on the lower side, since striving for the maximum would be too expensive."⁷⁷

In the 1966-Master Plan it could be read that "gardens with shade giving trees must be encouraged and the open spaces should be of small manageable sizes, which can be more easily maintained. The treeless open wastes which are dustbowls in dry weather, and quickly become baths of mud as soon as the rain falls, must be avoided" (Master Plan, 1966; Quotation from Mr. P.W.G. Powell in brochure "Karachi open

spaces"). The problem was thus not the provision of open spaces sec, but of suitable size, well-furnished and easily maintainable (Master Plan; 1966).

Since 1966, nothing has been stated about this aspect anymore. Yet building regulations exist, which have some effect on the state of the vegetation of a scheme. These are concerned with the space at the front, rear and sides of the building, the proportion of the site which may be occupied by a building and the plot/floor-area ratio. These regulations differ per plot size. Furthermore LDA (Building regulations LDA, 1984, p.29) remarks that "Boundary walls which abut on public streets, footways, or places which the public are allowed to use shall not have fencing consisting of barbed wire or any material likely to cause injury to persons or animals".

Development

The study area contains 21 parks (figure 10.1), and many other open recreational spaces, as sports grounds. It is relatively easy to create a typology of all these parks.

The rectangular park is surrounded by a stone wall of one foot high, on which an iron barrier is placed of three feet high. On each side, the park is open to the public via a small gate. Also on each side, or in each corner one or two benches are constructed. Earthen paths lead from each gate to the centre of the park, the crossing of which may be constructed in the form of a round-about. The parks lack all shade. Only some young plants may be present along the sides or in beds of simple form, the rest is grass.

The conclusion can be drawn that the parks are certainly not constructed to please the inhabitants. They are mathematically drawn, and are the result of sketch-book planning. Every visitor can notice the resemblance of all planned schemes-parks on the first day of his visit. Four real exceptions to this typology are to be found in the area: the Model Town park(21),⁷⁸ the main park of New Garden Town(19), a smaller park in New Garden Town(15) and a park in Model Town Extension(4), the latter functioning as a rubbish-dump.

The Model Town Park is a park of city level⁷⁹. It contains hills, fountains, ponds, paths of shells and play gardens. The "cave- restaurant" is still missing, but nevertheless entrance fee must be paid. The main park of New Garden Town is a park of divisional level. Its design can be seen in figure 10.2. The tiled paths are bordered by hedges and provided with lighting and dustbins. Along the sides and along the paths are shady trees and beds with coloured flowers. The parks in New Garden Town can, in general, be valued higher than the ones in Model Town Extension. They offer more shade and look greener.

Fig. 10.1: Location of parks in the study area (numbers explained in the text).

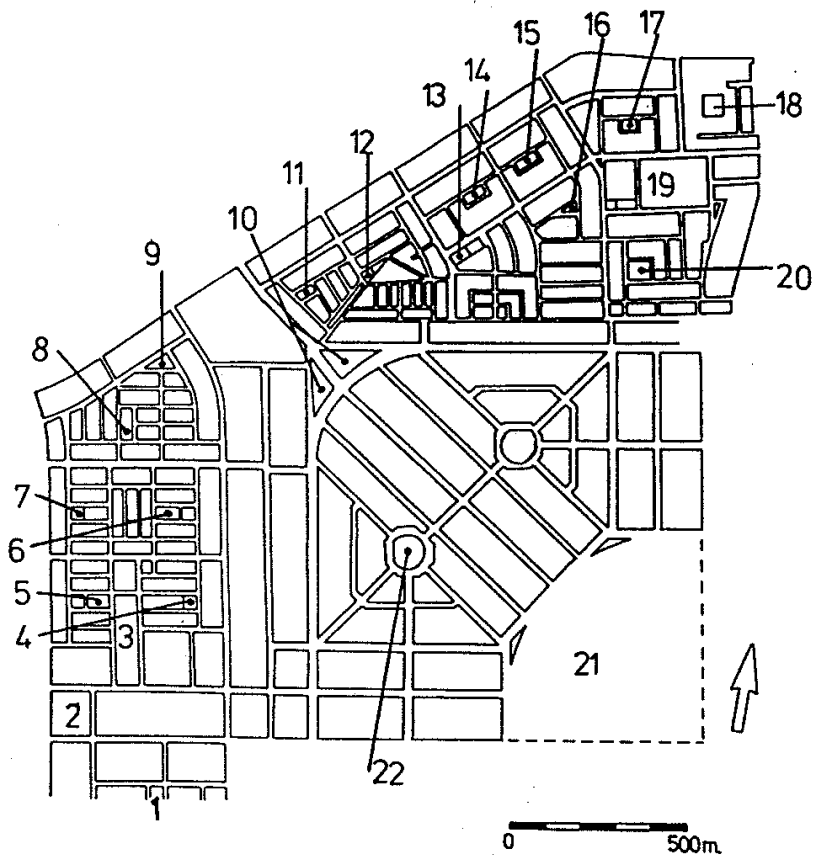


Fig. 10.2: Design of the main park of New Garden Town.

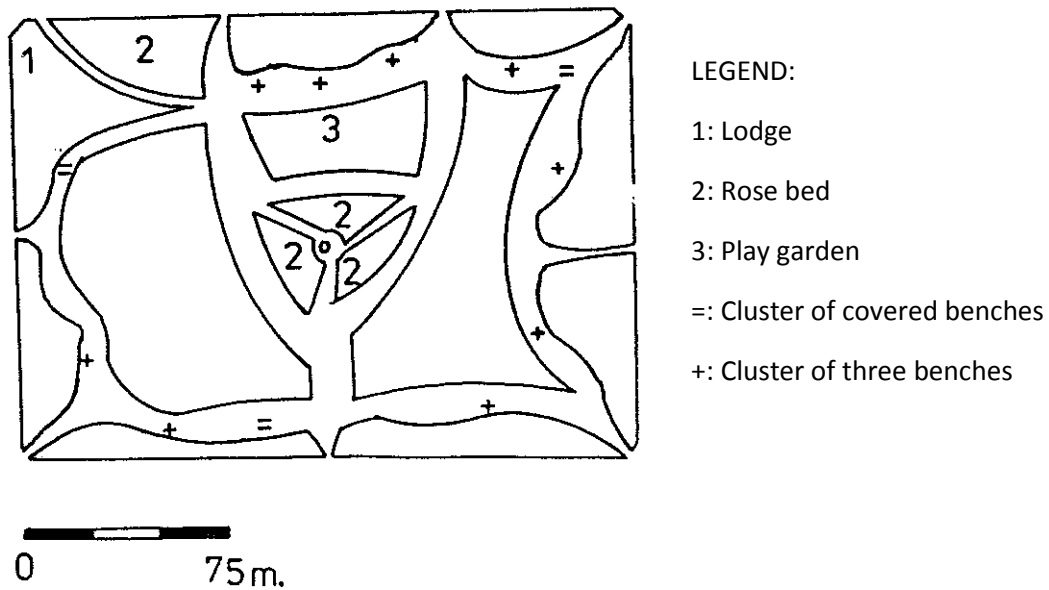


Table 10.2: Presence of parks per scheme (in grid-cells)

	New Garden Town		Model Town Extension		Model Town		Total area	
	Number of cells	%	Number of cells	%	Number of cells	%	Number of cells	%
Not present	406	91	401	88	534	81	1341	86
Present	39	9	56	12	121	19	216	14
total	445	100	457	100	655	100	1557	100

As noticed before, the study area contains some 17,500 inhabitants. According to the LUDTS standards (table 10.1), this would mean that at the divisional and lower levels 51 acres of recreational space would be necessary. This is equal to 20.6 hectares or 96 grid cells. In table 6.2 it can be seen that 173 grid cells in our study area have (at least for more than 50%) a recreational destination. Model Town Park should be partly excluded however, for this is a park of city level. The standards are thus indeed followed.

Table 10.3: Presence of parks per block (in grid-cells)

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
Not present	108	72	72	89	65	86	149	39	127	229	201	104	1341
Present	4	5	4	8	18	4	46	6	0	6	7	108	216
Total	112	77	76	97	83	90	195	45	127	235	208	212	1557

The green image of a residential area is not only defined by the number of parks, but also by the presence of vegetation along roads and on plots. The presence of vegetation around residential buildings is indicated in table 10.4. In full accordance with its Garden City-foundation, Model Town is the best off. New Garden Town has a few more green plots than Model Town Extension, while the special positions of Aibak- on the one hand and Ataturk-block on the other are noticeable (table 10.5). The most disappointing areas can be found around the flats (Sea Breeze flats excluded), in an old village and in the youngest part of New Garden Town (Tariq- and Ataturk- block) (map 20).

Table 10.4: Presence of vegetation on plots per scheme (in grid-cells)

	New Garden Town		Model Town Extension		Model Town		Total area	
	Number of cells	%	Number of cells	%	Number of cells	%	Number of cells	%
Not present	21	7	26	12	17	5	64	7
Little	71	24	57	26	59	16	187	21
Reasonable	118	41	81	37	105	29	304	35
A great deal	81	28	54	25	185	51	320	37
Total	291	100	218	100	366	100	875	100

Table 10.5: Presence of vegetation on plots per block (in grid-cells)

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
Not present	11	0	8	0	2	4	8	10	4	9	8	0	64
Little	19	13	26	5	9	12	25	14	6	42	17	0	187
Reasonable	26	33	26	16	17	25	36	3	17	54	51	0	304
A great deal	18	18	2	18	25	12	18	1	23	94	89	2	320
Total	74	64	61	39	53	53	87	28	50	199	165	2	875

Table 10.6: Presence of vegetation along streets per scheme (in grid-cells)

	New Garden Town		Model Town Extension		Model Town		Total area	
	Number of cells	%	Number of cells	%	Number of cells	%	Number of cells	%
Not present	293	78	256	73	252	71	801	74
Present	83	22	97	27	102	29	282	26
Total	376	100	353	100	354	100	1083	100

Table 10.7: Presence of vegetation along streets per block (in grid-cells)

	Tar.	Aur.	Ata.	Aib.	Shr.	L	M	N	K	D	E	Park	Total
Not present	72	46	66	54	55	58	118	18	62	130	111	11	801
Present	26	22	6	25	4	25	51	21	0	21	33	48	282
Total	98	68	72	79	59	83	169	39	62	151	144	59	1083

Table 10.8: Cross-table of vegetation along street and presence of parks (in grid-cells)

		Vegetation along streets				
		Not present	Present	Not applicable	Total	Total (%)
Presence of parks	Not present	735	253	353	1341	86
	Present	66	29	121	216	14
	Total	801	282	474	1557	100

Table 10.9: Three dimensional cross-table of vegetation along street per scheme, given the presence of parks (in grid-cells)

		Vegetation along streets			
		Not present	Present	Not applicable	Total
New Garden Town		31	0	8	39
Model Town Extension		22	19	15	56
Model Town		13	10	98	121
Total		66	29	121	216

10.2 Cattle

Planning

One can be very short about the "planning" concerning this aspect. As a Lahore Development Authority-functionary⁸⁰ stressed "cattle are absolutely not allowed in the schemes." Since some time a special "Cattle Colony" is present in Lahore (near Harbanspura in the far south of the city). The "cattle-wallah" however refused to go there, because they felt the need to stay close to their clients. After a few police-raids quite a lot of them were forced to go and stay in the cattle colony, but up to now many herds continue to traverse the various planned schemes. It follows that, although these activities are illegal, control (to be executed by the LMC) is not effective. According to an (anonymous) LDA official such activities simply must not be checked in reality, because the cattle men fully depend on this source of income. On the other hand control is not desirable either, because the residents of planned schemes prefer the fresh milk, which only the cattle-wallah can provide. The cattle thus perform an important amenity function in the schemes.

Development

In reality smaller or larger herds can thus be found in all schemes. Obviously every scheme contains enough feeding ground to sustain this extra population. They are predominant however in Model Town Extension. This is naturally because this scheme contains many vacant plots. The herds slowly move from one plot to the other, feeding on grass and shrubs, but also on illegal waste depots. The public and private gardens also play a role not to be underestimated in feeding this category of schemes' inhabitants. To give a crude indication of the number of animals to be found in the schemes an "animal count" was performed. In Model Town Extension, (including Model Town K-block), an area of less than 100 hectares (=app. 250 acres), some 40 sheep or goats were encountered, spread over 3 herds, 20 cows in 3 herds, a solitary donkey, a horse and, to be complete a "flock" of ten geese. In New Garden Town, no less than (in rough estimate) 125 sheep and goats were counted, and 10 cows, the former in 11 herds, the latter in 3. Where cows feed more on grass, present mainly on vacant plots and in parks in Model Town Extension, sheep and goats flourish on a menu of "waste", available in profusion in New Garden Town. Another feeding ground in Garden Town was the cemetery.

In Model Town considerably less migrating herds were present. Here more "static" animals were found however. The larger plots, with a long history of vacancy obviously enable "Katcha-inhabitants" to perform a peasant role within this prestigious upper class residential scheme! In Model Town Extension such very small scale stock or dairy farming also takes place, around the LDA flats in N-block.

The enormous number of chicken cannot be left unmentioned. Interesting is that these are present both walking around over waste disposals, and hanging upside down in one of the many stalls of the "chicken wallahs". For a western observer this abundance of animals in various types performs an important role in shaping the outlook of a particular scheme. The residents have accepted this situation as it is, taking advantage of it or at least not letting themselves be disturbed by it. None of the respondents of the questionnaire nor any of the residents interviewed, has mentioned this state of affairs!

Chapter 11 Review, conclusions and recommendations

11.1 General remarks

In this chapter the central question of the research, as put forward in chapter 1, will be answered. This question was:

"What has been the effect of various planning policies, executed by various agencies in various periods on the development and functioning of Lahore and its population?"

To do this the planning of 3 planned schemes in Lahore, as described before, will be summarized. (paragraph 11.2). Thereafter the results (or non-results) of this planning, thus the real development in these areas, will be reviewed (11.3). At last the confrontation of both items will be dealt with.

The main problem in executing this type of research is the fact that it is extremely difficult to measure the effects of physical planning- policies. Planning is linked to development via a chain of human decisions c.q. actions. This chain contains many positive and negative feedbacks. An example is the official policy to cater for the needs of the lower income groups, while developing residential schemes, by a reduction of plot size. The effect of this measure turned out to be the reverse of what was hoped for. The owners of these plots, belonging to the upper-middle class, decided to refuse to let their servants (lower class) settle on the plots, as these were considered too small therefore.

And yet it is clearly visible that planning has played its role in Lahore's development. According to Qadeer (1983; p. 255.): "There is almost no contemporary, internationally favoured idea, proposal, or programme, which has not found its way into Lahore. This evidence should dispel the assumption that the city has not developed.the example of Lahore invalidates the notion that Third World cities are passively witnessing their own race to disaster"

Not only the national and the local government has influenced urban planning in Lahore. Several international agencies did the same. These can be divided into two groups:

1. Semi-commercial agencies, like the World Bank, the Asian Development Bank and various agencies from donating countries. These are interested in commercially feasible projects, which are large-scale and capital-intensive. Examples are sewerage-supply or bulk water-supply. They have special interests in tariffs (as loans given must be repaid), in the creation of high-paid jobs for ex-patriate consultants and in the establishment of special agencies per project. (WASA in Lahore e.g. was set up on American instigation), thus enlarging bureaucracy. The main results of these activities are that the central government gains in importance, while local institutions are stripped off, and that all attention is paid to capital- intensive works.
2. Socially induced agencies (NGOs), like UNICEF. These still have little involvement in the provision of services. Although it is known, (for example from Karachi), that especially UNICEF is an important contributor to welfare programs in Katchi Abadis.

11.2 Urban planning in Lahore

In the different schemes that were studied, it can be seen in which period which ideas on urban planning were prevalent. In Model Town (planned in the 1920's) this was the so-called British idiom, with many characteristics of Howard's Garden City (Howard; 1965). In this period the aim of urban planning in Lahore

was the creation of a healthy and pleasant environment for the upper- and middle-class. Model Town Extension is, as it is planned in the seventies, an exponent of the modern idiom. In this physical planning is meant to perform a systems-control function. New Garden Town ('60's) takes an intermediate position, planned in a period when it was tried to reduce the housing shortage via large scale comprehensively planned housing schemes.

The idioms must not be seen as strictly separated. They are mostly concepts of the mind, characterized by specific items, and in a slow but steady process of mutual interweaving. Thereby in reality in Pakistan, only the concrete parts of planning-theories are of real importance. So the British idiom is characterized not so much by the idea of the city as a place of opportunity, as by the use of the bungalow as the basis of scheme lay-out.

It is even so that in all these years and throughout the complete evolution of planning rhetoric, the concrete foundation of urban planning in Lahore has remained remarkably constant. Three items appear to be specifically steadfast.

The first is the use of the land-use/zoning concept, both on city-scale and on scheme-scale. Accompanying zoning is the concept of blue print- planning. Apart from both master plans the only existing planning-documents are blue print maps of the schemes (to be) developed. It proved to be impossible to recover any underlying philosophy, idea, structure, research or whatever of these plans.

The next constant factor, is the fundamental position of the neighbourhood-principle. (It must be reminded that "neighbourhood" is used here in the original meaning of e.g. Geddes and Perry. Amongst others Qadeer (1983, page 204) uses the term in a slightly different sense. On the scale level of the scheme this is the dominant concept. Yet it is easy to criticise this concept in Lahore. In this place only three general points of criticism are raised.⁸¹

1. The theoretical challenge. Christaller has already shown that a continuous range of services exists. Consequently a continuous range of neighbourhoods of different sizes would be necessary.
2. The practical challenge. The increasing mobility, changing consumer- behaviour and the development of a society more based on interests than on proximity have generated a "community without propinquity" (Webber; 1964), in Pakistan as much as in Europe or the US.
3. The geographical challenge. Especially in Pakistan society is differentiated into strata, classes and circuits on a basis of mostly income and lifestyle. These strata are spatially relatively interspersed on the scale-level of the individual scheme.

The third constant factor is that planned development in Lahore has always meant the realization of low-density residential schemes for the higher income groups. The only socio-economic criteria explicitly involved in the planning of these schemes is income. This on its turn is only linked to planning via the factor plot size. Through the years a clear reduction in plot size is visible, but because of rising land prices (speculation, land-acquisition problems) this has not automatically meant that schemes are meant for the lower income groups. Thereby it must be kept in mind that these lower income groups make-out more than three-quarters of the total population of Lahore.

Equally important socio-economic characteristics (family-size, socio- cultural background (religion/sect, rural/urban origin etc.) geographic and economic behaviour) are not taken into account at all. Implicitly they are of course, via the predominance of the bungalow culture.

This culture is preserved mainly via the building regulations. These set the framework for the preservation of the bungalow culture via a restriction of the number of stories to 2 and by obliging free space all around the building. The architectural tradition in Lahore, and the image among the upper class, that the bungalow is the prestigious type of dwelling work in the same direction.

Interesting is the planning of public facilities and services in the different schemes. The continuous decrease of plot size has increased the population density in the schemes and thus the need for public facilities. Yet LDA plans only via the instrument of specific minimum percentages of the area, to be used for different functions. The commercial (in particular shopping) facilities receive a great deal of attention. Only Kem Chand, the designer of Model Town had in mind a co-operative housing society with co-operative shops. New Garden Town and Model Town Extension both show another pattern. A hierarchical system of shopping centres, spread over the complete scheme is to evolve via the same mechanism as ordinary residential areas: plot development on an individual basis.

In theory the planning of educational and medical facilities is also guided by the neighbourhood principle. It is however recognized already in the planning phase that educational facilities cannot be organized on the scale of the neighbourhood and that medical facilities are organized very centrally in Pakistan. Large hospitals serve many people on most health problems. Private clinics do the rest on a smaller scale. There above both sectors show considerable qualitative differences. No standard quality of e.g. schools exists and differentiation to social standing does the rest. This brings Qadeer (1983; p. 216) to the conclusion: "The planners must feel that the rich do not need municipal schools nearby." The same applies to clinics, dispensaries and hospitals.

The planning of recreational facilities on scheme level is confined to parks. In this a hierarchical schedule is applied. On scheme level no planning of public transport takes place. Routes and the maximum number of private or public (mini)buses are to be decided upon on an ad-hoc basis.

Public services as the provision of gas, electricity and running water or solid waste collection, sewerage and drainage are also planned on city level. It is taken for granted that these should be available for all residents of a planned scheme. On whether this is necessary and justifiable (natural gas being a good example) or reachable (solid waste collection) no words are spent. Other organisations (WASA, L.M.C.) are responsible for the maintaining of these services.

11.3 Development of city and schemes

In principle cities must be regarded as communities whose well-being is largely indivisible. As stated by Qadeer: "One segment of a city's population cannot enjoy clean air, plentiful water, a smooth flow of traffic, or freedom of epidemics and disturbances without others being extended the same benefits. Similarly, the development of one element of an urban system without parallel growth of others is not usually beneficial." (Qadeer; 1983; p. 253). Drainage is a typical community good. Flooding does not stop at the fringe of a planned scheme. Yet even in this respect planned schemes are better off. As stated the planning of schemes sets the direction for urban growth. Areas sensitive to flooding are simply by-passed in planning, and taken in by N.I.C.'s or Katchi Abadis, without the necessity for the government for drainage improvement. This brought a Lahori to suggest in a letter to the editor of the Pakistan Times that LDA had concluded a pact with the meteorological survey to let flooding happen only in the indigenous parts of the

city. And indeed measuring the water table in the streets after heavy rain is an easy manner for dividing the city in an indigenous and a western part.

Thus for some aspects, Qadeer is right, but the case of Lahore shows in others "the" community's well-being is divisible. The city's population has split into several communities, on a basis of in particular life style and socio-economic standing. These different groups do not only segregate socially, but (on the scale level of the city as a whole) also spatially. Although this process started long ago, it operates on a very large scale since the 1960's. By then:

"House lots were badly needed for increasing numbers of households, and the relentless demand could not be met by a few planned schemes undertaken by LIT. The land market split into an upper circuit, consisting of lots in planned schemes, and a lower circuit, comprised of unofficial subdivisions in New Indigenous Communities. The poor, priced out of both circuits, resorted to squatting on unclaimed evacuee lands or public open spaces." (Qadeer; 1983; p. 226).

On the scale level of the neighbourhood however all of these segments are present. They cannot be segregated geographically on this scale level, because of necessary interrelations. Neither the upper nor the lower circuit can exist without contact with the other. In this sense they do form a community.

Land is an absolute necessity for human beings. The term "land" subsumes improvement put over it. Thus land is a very special commodity. It is both a necessity and a property. As a necessity, some minimum supply must be available to all, and to ensure this minimum is a public responsibility. As a property, land is a source of financial gain, social prestige and personal satisfaction. It thus falls in the private realm. Often the public interest in assuring the basic necessity for all and the private drive for individual gain, conflict. As the public facet is the more important for the lower classes and the private for the upper the outcome of this conflict is obvious. This is why urban land markets must operate under stringent public controls. In fact the term land market is misleading, because it refers to a mode of individual transactions taking place within the framework of public regulations.

Lahore is a city of mixed land use. Almost every constituent area, be it a planned scheme, a New Indigenous Community or a Katchi Abadi has not only residential and commercial activities, but also, within these broad categories wide ranges of architectural styles and types of establishment. Only on the level of blocks or mohalla's uniformity in land use can be detected, mainly because LDA strives for zones of uniform land use as the basic foundation of the neighbourhood principle. As a result of these rigidly applied planning principles planned schemes show by far the most uniformity.

Within each of the three schemes other uses than the residential are indeed visibly present, but segregated from it, and clustered. The only exceptions are "illegal" uses. This accounts as well to lower class activities, with small scale services or agriculture, as to the higher ones with tertiary and some secondary sector activities. It seems to be the case that these land uses, although visibly unimportant are indispensable for the functioning of a scheme. The age of a scheme plays a role in this. It takes a very long time for a scheme to mature. In a younger scheme very many plots lie vacant for years, in an older one many dwellings are given other uses (offices, small scale industry).

Restrictions in the building regulations and architectural traditions have made the schemes-development a horizontal event, using up vast areas of expensive land. This has made plots in planned schemes

expensive to obtain and to live on, causing two interesting features. At first it is not at all certain that specific schemes do cater in reality to their proposed target groups. A research undertaken by the University of Engineering and Technology of Lahore showed that in Iqbal Town "social overvaluation" took place, i.e. that the scheme was inhabited by considerable higher classes than its target group.

The other interesting feature is the "planned scheme lifecycle". All through its history a scheme performs different functions and shows a specific development in land prices and -use. The indigenous private sector performs all necessary amenity functions, until the moment the scheme is filled up to a specific degree that enables the firm sector to take over.

When considering commercial facilities the large number of (small) shops is striking⁸², together with the rise in numbers of shopping plazas. In educational and medical facilities the process of streaming, i.e. of splitting up the whole "market" in streams of various qualities, styles and costs, has caused problems for all social classes. Differentiation of facilities by quality and social standing militates against any territorial organisation. Therefore "transportation of children to school and back is a major task of the day. The poor cope with it by suffering deprivations, for the middle class it is a constant hassle, while the upper strata have to spare official vans and family cars to bring children back and forth." (Qadeer; 1983; p. 217).

Public facilities however are not present in a sufficient number in each individual block, to make the neighbourhood principle valid. If present in a scheme the scale level and the spatial clustering of these activities obstruct the principle.

Two socio-economic aspects are very interesting. The first is of course the income of the inhabitants, as an indicator of their economic position. The average monthly income in the three schemes studied, is RS. 7500, whereas according to LDA the high income category starts at RS. 4200 monthly. Thus all schemes are inhabited for the very most part by the high income group. The overall conclusion is simple: the inhabitant of a planned scheme, no matter of its age, is a member of the upper class, not only in income but also in social standing, as follows from the factor lifestyle. Most people are of urban origin, have a western lifestyle with a taste for luxury and have relations abroad.

11.4 Planning and development; some inferential propositions

In this chapter some inferential propositions will be put forth. These include concrete conclusions or recommendations, but also reflections that will hopefully be food for further thought. The different statements will be treated one after the other, although in reality they are all related.

The ultimate objective of planning should be the improvement of life for all. To attain this in Lahore the upper classes do not need any help at all. Full attention should be given to the lower-middle class, for this is still within the reach of planning. At least (poor) Peter must no longer be robbed to pay (rich) Paul.

Physical planning should have a limited scope. Sectorial developments (transport, education, commercial facilities) and maintenance tasks must be excluded. It should also have limited resources and a limited organisation, to prevent it from growing from a means into a target.

Within the framework of objectives, local (thus situationally specific) solutions for local problems are required. Pre-packaged policies, no matter whether they come from New York, Stockholm or Islamabad are superfluous and a waste of time, money and attention.

Lahore is a Pakistani city. Therefore city planning should be rooted in Pakistani culture. It must correspond with local traditions and customs. It is crucial that this statement surpasses the state of rhetoric and becomes reality. The only method to achieve this is to give individual creativity and ingenuity the opportunity to express themselves. The vernacular has already displayed its adaptability to new technology, demands, standards and customs, e.g. in the development of new indigenous communities.

The organisation and functioning of the city must be rated at its true value. LDA should bow to the inevitable and take as its point of departure the fact that the city is not organized in areas of specific land use, but in social-ecological units. These must be taken as the starting point of planning policies.

The task of the public sector in this is twofold:

1. Conditional. The government c.q. the planning institution must offer the individual the opportunity to transform its creativity and energy in something material. Its most important task will be the provision of land on which secure and permanent housing can be established.
2. Control. It must be controlled that the real target group is reached. Exploitation of the less powerful by the more via the public sector must be prevented.

Urban land is a public resource. It is so crucial to the functioning of the city that private interests must give way. But then it is a necessity to use this necessary control over (potentially) built over land as a means of eventually benefitting the whole of society.

In essence two changes in the planning of Lahore's expansion must take place:

1. Architecture and lay out plans must be converted into the indigenous vein. In particular in Lahore, which can expand in only one direction for reasons of site and situation, much higher residential densities must be achieved. The only way to do this is to exchange the planned scheme idiom for the new indigenous community idiom. A cultural transformation must then be strived by exposing this idiom as the standard and as an example of modernity. E.g. Mumtaz (1986) has shown that this is very well possible.
2. The policy of plot development must be exchanged for a policy of area-development, in which individual self-responsibility, ingenuity, creativity and energy, driven by the need for shelter and comfort and stimulated via indigenous institutions and methods are given the opportunity to crystallize.

Social progress in the Third World will be attained through self-reliance and the encouragement of indigenous experiments. Such an approach does not exclude foreign ideas and technology but insists on adopting and assimilating them within a progressive, indigenous framework.

APPENDIX 1 MAPS.

Data for each plot and road in the study area were collected by means of an extensive field survey and by means of map-research. Thereafter the resulting map values were transformed to a total of almost 33,000 grid cell values (1557 grid cells multiplied by 21 characteristics for each cell). Finally, these grid cell values were analysed with the help of a Geographical Information System (GIS), the computerized cartographic program USEMAP. The maps are referred to as follows:

- Map 1: dominant land use
- Map 2: dominant land use (simplified)
- Map 3: commercial facilities
- Map 4: public facilities
- Map 5: secondary land use
- Map 6: secondary land use (simplified)
- Map 7: width of paved road
- Map 8: width of road between walls
- Map 9: type of road
- Map 10: size of dwelling
- Map 11: age of dwelling
- Map 12: state of maintenance of dwelling
- Map 13: type of dwelling
- Map 14: number of floors per dwelling
- Map 15: plot size
- Map 16: number of dwellings per plot
- Map 17: Katchi Abadis
- Map 18: illegal waste depots
- Map 19: illegal commercial facilities
- Map 20: verdure on plots
- Map 21: verdure along streets

Remarks:

Map 1, 2, 5 and 6: For all grid cells the dominant and secondary land use were established. A specific land use was called dominant when it covered at least 30% of the area of the specific grid cell. For the secondary land use this figure was 20%.

Map 3, 4, 17-19: All grid cells that contained the specific phenomenon were taken into account.

Map 7-9, 21: Categorizing has been done whenever a road was present in a grid cell. When two or more roads were present in the same cell, the longer one was the one that was taken into account.

Map 10-16, 20: Only "residential cells" were taken into account, i.e. cells where one or more residential plots were present.

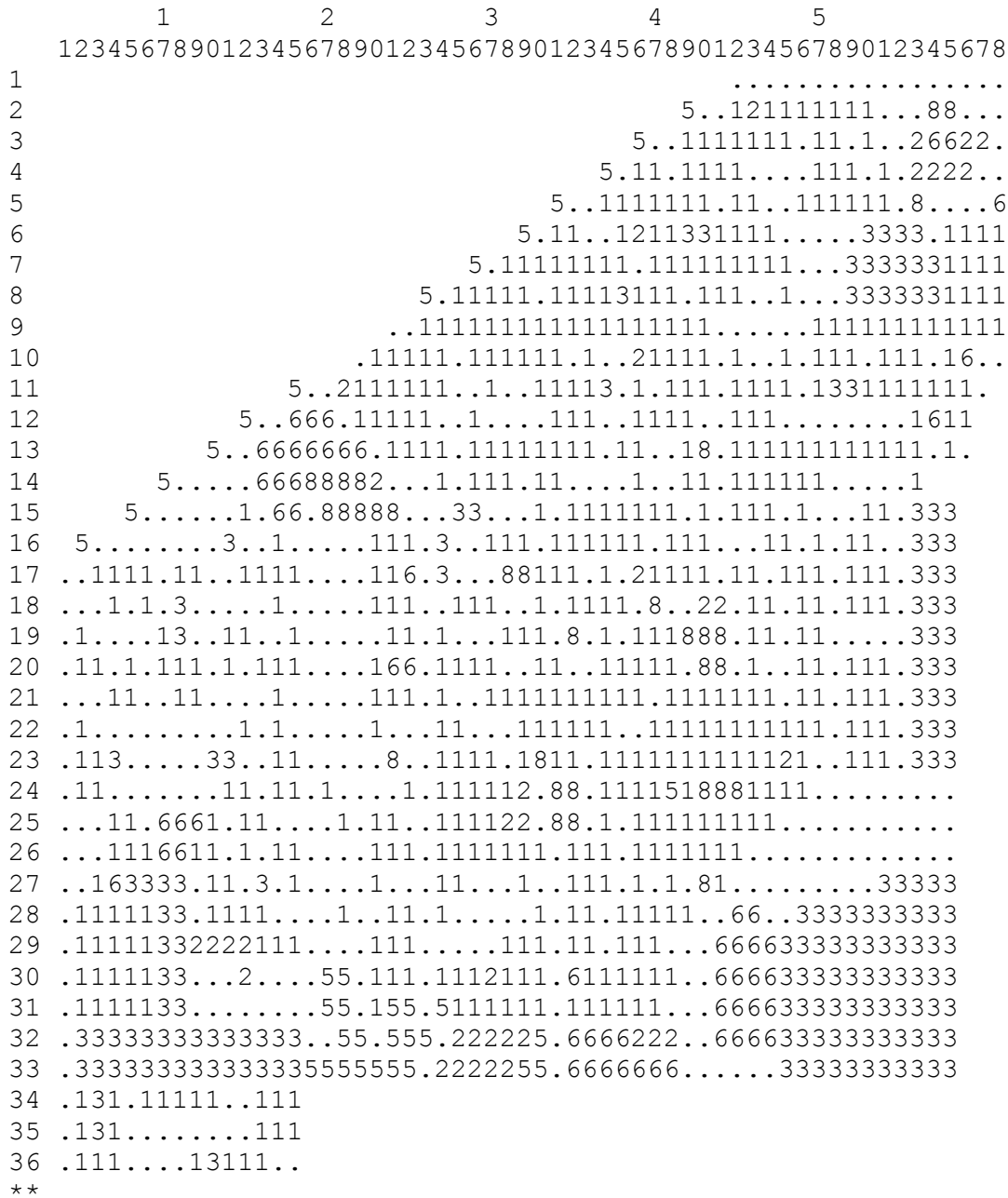
Map 1: dominant land use in study-area

	1	2	3	4	5
1	123456789012345678901234567890123456789012345678				
2				44444444444444444444	
3				54.121111111.7788774	
4				5441111111711.1.4266224	
5				5411.1111477.111.14222277	
6				5441111111.11771111114877776	
7				5411..1211331111477..3333.1111	
8				5411111111.1111111117773333331111	
9				541111141111311141117.14773333331111	
10				..1111111111111111177777411111111111	
11				4111114111111.14.21111.17714111.111416..	
12				5442111111.41771111371.111.111141331111114	
13				544666411111771.777111771111..11174777771611	
14				544666666641111.111111117117718.11111111111.14	
15				5447776668888244414111711444414411411111477441	
16				54477741.66788888744334441.111111171711171447114333	
17				544..777.3..1.77741114344111.11111171117.7117141174333	
18				4.1111411..111177741164344488111.1.21111.11411141114333	
19				4.4171.3.7.7.1777741114411144171111.8442241141141114333	
20				4177771377114.1777471141.77111.871711188841141144444333	
21				41171.1117171117774166411117711..1111148841741141114333	
22				44411..1147.41.77741114177111111111411111141141114333	
23				41.7777.74.141.77741.741144711111144111111111141114333	
24				411377777337411477478741111418114111111111121441114333	
25				411.7477..114114174771411111248841111518881111447777777	
26				44.1146661711774714117411112248841711111111144777777777	
27				4.71116611.14114774111411111114111711111114477777777777	
28				4.163333411.3.147741774114441.4111417148144777777733333	
29				4111113341111..471471141447771411.1111144667733333333333	
30				4111113322221114774111444771114114111444666633333333333	
31				4111113377727774554111411121114611111144666633333333333	
32				411111334777777455415545111114111111744666633333333333	
33				4333333333333334455455542222254666622244666633333333333	
34				43333333333333355555542222255466666644777733333333333	
35				413141111177111	
36				413177777777111	
37				411147771311177	

LEGEND

- 1 : RESIDENTIAL
- 2 : COMMERCIAL
- 3 : RECREATIONAL
- 4 : ROAD
- 5 : AGRICULTURAL
- 6 : PUBLIC
- 7 : WASTE
- 8 : REST
- . : NOT APPLICABLE

Map 2: dominant land use in study-area, simplified.



LEGEND

- 1 : RESIDENTIAL
- 2 : COMMERCIAL
- 3 : RECREATIONAL
- 5 : AGRICULTURAL
- 6 : PUBLIC
- 8 : REST
- . : NOT APPLICABLE

Map 3: commercial facilities in study-area

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LEGEND

- 1 : SHOPS
- 2 : SERVICES WITH PERSONAL CONTACT
- 3 : SERVICES WITHOUT PERSONAL CONTACT
- 4 : REST
- 5 : TWO OR MORE CATEGORIES PRESENT
- . : NOT APPLICABLE

Map 4: public facilities in study-area

[illegible]

LEGEND

1 : SCHOOL

2 : DOCTOR

3 : CLINIC

4 : RELIGIOUS INSTITUTION

5 : GRAVEYARD

6 : PARK

7 : PARK AND RELIGIOUS INSTITUTION

8 : PARK AND SCHOOL

9 : RELIGIOUS INSTITUTION AND SCHOOL

.: NOT APPLICABLE

Map 5: secondary land use in study-area

	1					2					3					4					5				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
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LEGEND

- 1 : RESIDENTIAL
- 2 : COMMERCIAL
- 3 : RECREATIONAL
- 4 : ROADS
- 5 : AGRICULTURAL
- 6 : PUBLIC
- 7 : WASTE
- 8 : REST
- . : NOT APPLICABLE

Map 6: secondary land use in study-area, simplified

	1									2									3									4									5											
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8
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LEGEND

1 : RESIDENTIAL

2 : COMMERCIAL

3 : RECREATIONAL

5 : AGRICULTURAL

6 : PUBLIC

8 : REST

. : ROADS, WASTE, NOT APPLICABLE

	1	2	3	4	5
	1234567890123456789012345678901234567890123456789012345678				
1				555555555555555555	
2				5555.....4.5.2.5	
3				5555.44444444444444.55555	
4				5555.22244.222222.4.55525	
5				555533222.2244222222.4.44444	
6				555..44432222234444444444444444	
7				55544444422332.444244..2....34444	
8				5555..444.2223.3444222.4..2....33..4	
9				5553.444334222.442222222.4444442443..4	
10				555.443433233444442222222224222222.33.44	
11				5555..4442232223334422222222224.21122.3..4	
12				5555555422221132111113422222.233334.3222223.4	
13				5555.....552221333333313422212.2222242222222222	
14				5555.44..4111155222222444444444444444444444444	
15				5555.22244.4222225552224544222.....224...4...	
16				55553322122244422222244444.222..222222222222.4...4...	
17				555.223222222.54..2...44444...222..22.....222..4...4...	
18				5222223222221.44..2...44..444...22..2222222.2..4...4...	
19				552.222.22221244..2...4222..444...22.22..22222242224222	
20				55244424442444444..2...42.222..444..22222222.2..4...4...	
21				55244224424424444332333422..222..44422222..222..4...4...	
22				5522222222222244..2...4.222.2222..244..33..333.4...4...	
23				5522222222222244..2...4..2222222222.44...33..2243334333	
24				5522222222222244..2...4..2..222222..444..2223333333333	
25				55333333333333344..2...4..2..22222.222..444.3333.....	
26				5522222.22222244..2...4..2.2222222.222..4333.....	
27				5522222222222244..2...4..2222222222..22333.....	
28				5522222.22222244..2...4.22....2....222333.....	
29				5522222.2...4.442222224222222222222222333.....	
30				55...22.2...4.442222224222222.2.....33.....	
31				554444444444444444..2...4.....42444444433.....	
32				55..3.....44332333444444442444444433.....	
33				554434444444444444..2...4.....2.....33.....	
34				5333244444444344	
35				53332....22.3.4	
36				533322222222224	

1 : < 3 METERS
2 : 3 METERS
3 : 4 METERS
4 : 5 OR 6 METERS
5 : > 6 METERS
. : NOT APPLICABLE

Map 8: width of road between walls in study-area

	1	2	3	4	5
1	1234567890123456789012345678901234567890123456789012345678				5555555555555555
2				5555.....4.5.2.5	
3				5555.443333333334.55555	
4				5555.33344.332222.4.55525	
5				555533333.3344332223.4.44444	
6				555..33333322334444444444444444	
7				55544333333332.444344..3....34444	
8				5555..344.2222.3444323.4..3....32..4	
9				5553.333224222.443332223.4333332332..4	
10				555.333322224444433333333334233322.33.44	
11				5555..33233221122443333333322224.11122.2..4	
12				5555555332222233111112411311.311114.2222222.4	
13				5555.....552222333333313411311.2111141222222222	
14				5555.33..4111155222555555555555555555555555555555	
15				5555.33333.4333335555554555333.....333...3...	
16				555522333333333433433355544.333..3333333333333.3...3...	
17				555.333222333.54..4...54444...333..33.....333..3...3...	
18				5333233333333.34..4...54..444...33..3333333.3..3...3...	
19				553.333.33332234..4...5333..555...33.33..33333333333333	
20				5534443444344444..4...53.333..555..33333333.3..3...3...	
21				5524433442442444334333533..333..55533333..333..3...3...	
22				5522233222222244..4...5.333.3333..355..33..333.3...3...	
23				5522233222222244..4...5..3333333333.55...33..3333333333	
24				5522233222222244..4...5..3..3333333..555..3333333333333	
25				5533333333333344..4...5..3..33333.333..555.3333.....	
26				5522233.32222244..4...5..3.33333333.333..5333.....	
27				5522233232222244..4...5..33333333333..33333.....	
28				5522233.33332344..4...5.33....3....333333.....	
29				5533333.3...3.44334333533333333333333333333333.....	
30				55...33.3...3.443343335333333.3.....33.....	
31				5533333333333344..4...5.....33333333333.....	
32				55..3.....44334333533333333333333333333333.....	
33				5544344444444444..4...5.....3.....33.....	
34				5222244444444244	
35				52222....33.2.4	
36				522223333333224	

L E G E N D

- 1 : < 6 METERS
- 2 : 6 - 10 METERS
- 3 : 10 - 15 METERS
- 4 : 15 - 20 METERS
- 5 : > 20 METERS
- . : NOT APPLICABLE

Map 9: type of road in study-area

	1					2					3					4					5				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
1																									
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3																									
4																									
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32																									
33																									
34																									
35																									
36																									

Legend

- 1 : UNPAVED
- 2 : GRAVEL
- 3 : BRICK
- 4 : ASPHALT, IN BAD STATE
- 5 : ASPHALT, IN GOOD STATE
- . : NOT APPLICABLE

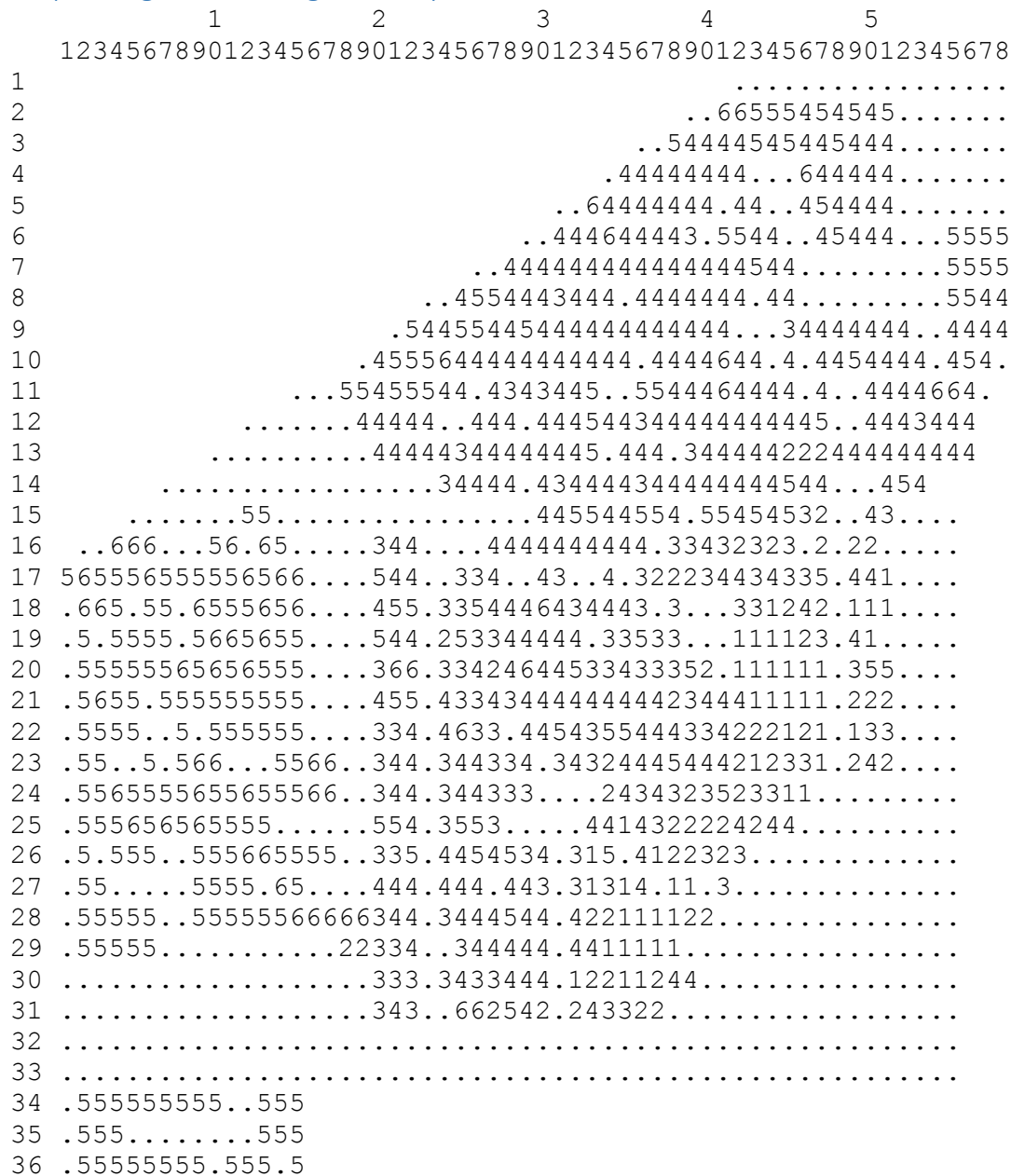
[illegible]

```

1 : VERY SMALL (< 125 SQ.M.)
2 : SMALL (125 - 175 SQ.M.)
3 : MEDIUM (175 - 250 SQ.M.)
4 : LARGE (250 - 400 SQ.M.)
5 : VERY LARGE (> 400 SQ.M.)
. : NOT APPLICABLE

```

Map 11: age of dwellings in study-area



Legend

- 1 : PRE-PARTITION
- 2 : 1947 - 1959
- 3 : 1960 - 1969
- 4 : 1970 - 1979
- 5 : 1980 - 1986
- 6 : UNDER CONSTRUCTION
- . : NOT APPLICABLE

Map 12: state of maintenance of dwellings in study-area

	1										2										3										4										5									
	12345678901234567890123456789012345678901234567890123456789012345678																																																	
1																																																	
2444444444.....																																																	
3	..42443444334333.....																																																	
4	.33333333....33334.....																																																	
5	..43332323.33..3433333.....																																																	
6	..344444332.3434..33233...2332																																																	
7	..333.34334333333433.....3233																																																	
8	..3343233334.3433333.43.....3323																																																	
9	.34344433433334333443...23233324..3333																																																	
10	.4433333434333334.3343.3..2.3333323.343.																																																	
11	...44344332.3332333..43323.3333.3..3333..4.																																																	
1223333..333.333334333332233344..3332443																																																	
1333342333333333.333.3.3333111333333333																																																	
141111....33443.433234333334333433...343																																																	
1532...11111.....334444443.34432433..33....																																																	
16	...44...34.42.....233....3333333343.33332.2342.22.....																																																	
17	343334333334444....334..332..33344..12223323434.222....																																																	
18	.443.33.4223434.....44.324234.433343.3...331232.321....																																																	
19	.3.3333.3442443....333.233343343332433...222323.32.....																																																	
20	.44444344444434....2...33434.33422333342.111222.334....																																																	
21	.2312.22222221....444.333324433333331234222322.222....																																																	
22	.1111..2.123232....334.4423.3343244443223224332.223....																																																	
23	.11..1.323...12....334.333333.23224333333123433.233....																																																	
24	.22312222222212....333.233223....1433311212222.....																																																	
25	.122323232211.....344.4331....2312311113324.....																																																	
26	.1.222..122332244..334.3343433.214.3211223.....																																																	
27	.11....1111.32....224.443.332.32223.14.3.....																																																	
28	.31113..2222223....344.3442432.433322133.....																																																	
29	.44334.....333..343443.3433222.....																																																	
3023313412323.222.2244.....																																																	
31333....2333.344423.....																																																	
32																																																	
33																																																	
34	.111333333..333																																																	
35	.111.....333																																																	
36	.1114333....4..																																																	

Legend

- 1 : NEGLECTED
- 2 : BAD
- 3 : REASONABLE
- 4 : GOOD
- . : NOT APPLICABLE

	1	2	3	4	5
	12345678901234567890123456789012345678901234567890123456789012345678				
1				
2					..111111111132.....
3					..11112111222112.....
4					.11222122...222222.....
5					..21111222.22..222222.....
6					..111222222.2222..222222...4444
7					..12112222222222222222.....4444
8					..1111112222.2222222.22.....2211
9					.11211122222222222222..22222222..1121
10					.211222222222221.22222222.222222.111.
11					...12122222.2222222..22222222.2..222221.
12					.....22222..233.333222233222232222..2222111
13					.....22222233333332.333.32333355533333333
14					.....5555....22212.11222222222121221...121
15					.....21...55555.....52111222225.1111222.511....
16					..111...22.21....222....1112212221521121521.1.155....
17					211111222222211...122..111.522112111111122111.211....
18					.111.22.2222221...111.221222111221251...211111.315....
19					.2.2222.2222221...211.111122215.21221...111111.1.5....
20					.12221222222222...11..11122222112111121.122111.111....
21					.2222.222222221...222.112222221211221111121111.111....
22					.2222..2.222221...112.1222.2222111221121211211.111....
23					.22..2.222...21....221.211122.22112221122111211.121....
24					.22222222222221...211.222222....2121145252111.....
25					.322222222222...222.2111....2152244441111.....
26					.3.222..222222111..111.1222211.21222144212.....
27					.32....3333.21....221.212.122.21211.1251.....
28					.32222..33333211122111.2111211.111111111.....
29					.32222.....35112..222111.1211111.....
30					.....111.1111211.11111111.....
31					.....111..111111.111111.....
32				
33				
34					.4444444444..444
35					.444.....444
36					.44422222.222.1

```

1 : DETACHED
2 : SEMI-DETACHED
3 : IN A ROW
4 : FLATS
5 : KACHA & SEMI-PUCCA
. : NOT APPLICABLE

```

Map 14: number of floors per dwelling in study-area

	1	2	3	4	5
	1234567890123456789012345678901234567890123456789012345678				
1					.....
2					..22212222122.....
3					..22122212123222.....
4					.12122122...111122.....
5					...2121211.12..222211.....
6					..112222211.1212..21211...3333
7					..121.21121222111112.....3333
8					..2122121122.2112112.22.....2112
9					.22121112222212121112...21211122..2112
10					.1222211112221112.1112222.2.2111112.122.
11					...12121121.1123222..22222.2222.1..1111222.
12					.....11222..222.222212221112121212..1221121
13					.....22212222222222.222.112222111222222222
14					.....22221.122112111121112211...122
15					.....22.....1212212221122211212.122....
16					..2.2...2..22.....112....1221111121111111111.111....
17					2212222222222222...221..111..1122211112111111112.222....
18					.222.12.2212222...122.122111221121212...221112.211....
19					.2.1222.2221222...111.112122221.11111...111222.111....
20					.22222221221222...222.11212211211112112.112111.222....
21					.2222.122112222...112.211121211112112222222111.112....
22					.2222..1.122223...111.1..1..121111111112111112.111....
23					.12..1.212...22...211.122112.22121111212121211.221....
24					.2221212112222222..222.111111...1111131211222.....
25					.122212221211.....221.2221....1111133331222.....
26					.1.222..211222211..222.1121122.22111133221.....
27					.12....2222.22...222.122.111.22122.2212.....
28					.12112..222221222..222..111112.122211212.....
29					.32122.....11221..111212.2222111.....
30					.....111.2111112.22122222.....
31					.....212..211222.212221.....
32					.....
33					.....
34					.3333333333..333
35					.333.....333
36					.33321221.222.2

Legend

1 : ONE
2 : TWO
3 : THREE OR MORE
. : NOT APPLICABLE

Map 15: plot size in study-area

	1								2								3								4								5							
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	
1																																								
2																																								
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Legend

- 1 : 5 MARLAS
- 2 : 7 MARLAS
- 3 : 10 MARLAS
- 4 : 1 KANAL
- 5 : 2 KANALS
- 6 : 4 KANALS
- 7 : 6 KANALS
- 8 : 8 KANALS
- 9 : FLATS
- . : NOT APPLICABLE

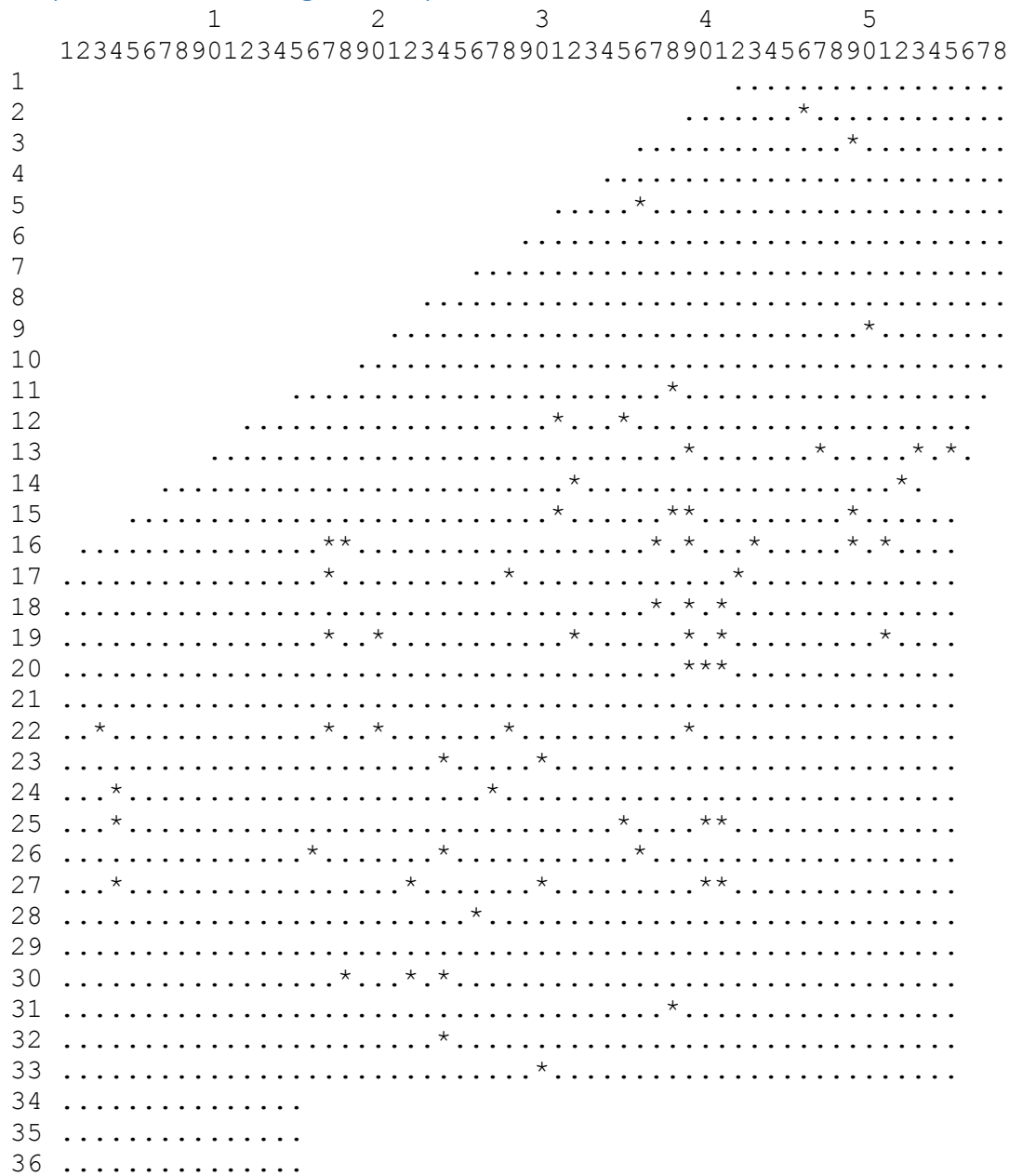
Map 16: number of dwellings per plot in study-area

	1								2								3								4								5							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
1																																								
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3																																								
4																																								
5																																								
6																																								
7																																								
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35																																								
36																																								

Legend

- 1 : LESS THAN ONE (I.E. JOINT PLOTS)
- 2 : ONE
- 3 : TWO
- 4 : THREE OR FOUR
- 5 : FIVE OR MORE
- 6 : BOTH SPLIT AND JOINT PLOTS PRESENT
- 7 : KACHA AND/OR (SEMI-) PUCCA
- . : NOT APPLICABLE

Map 17: kacha dwellings in study-area



Legend

* : PRESENT

. : NOT PRESENT

[illegible]

```

1 : LEGAL WASTE DEPOT
2 : ONE ILLEGAL WASTE DEPOT
3 : TWO ILLEGAL WASTE DEPOTS
4 : MORE THAN TWO ILLEGAL WASTE DEPOTS
5 : LEGAL AND ILLEGAL WASTE DEPOTS
. : NOT APPLICABLE

```

[illegible]

```

1 : SALE OF FOOD (ONE STALL)
2 : ID. (TWO STALLS)
3 : ID. (THREE STALLS)
4 : SALE OF NON-FOOD (ONE STALL)
5 : ID. (TWO STALLS)
6 : SERVICES
7 : SALE OF FOOD AND/OR NON-FOOD AND/OR SERVICES
. : NOT APPLICABLE

```

Map 20: verdure on plots in study-area

	1	2	3	4	5
1	1234567890123456789012345678901234567890123456789012345678				
2				.....
3				...44444444.4.....	
4				..34443433333443.....	
5				.23433333...33333.....	
6				..43343433.23..332322.....	
7				..333.43432.3443..24342...4444	
8				..334433432234333332.....4444	
9				..4434442332.2224332.33.....4434	
10				.34244434223423223233...33323434..4432	
11				.4333243334223343.3323.2223.343.324.444.	
12				....3344334.3331132..33332.3233.4..4334.44.	
13				.....43422..221.121234322321322243..2322444	
14				.....23232223222232.322.112222111332422313	
15				.....1111...34443.444334444444334443...424	
16				.....44...11111.....244223344.34444322..43....	
17				.....34.33.....333...234244233322133333334.44.....	
18				23122.133142233...433..442.223343232233342444.444....	
19				...4.23.332334.....444.44433.1423343.42..243444.233....	
20				.3.3243.3..3232.....344.343343341134434...444443.44.....	
21				.44134333424323....2...44343222322333423.224333.443....	
22				.3332.342324434....333.442224444442244332224224.444....	
23				.4332..3.323333....433.4.32.3334344444232334424.444....	
24				.42..2.1.....22....433.344323144344443342244244.444....	
25				.43.322.2142444....422.432322....4234211112444.....	
26				.12233.3.2132.....234.3411....4342411114444.....	
27				.3.333..143441311..334.3431444.44334231243.....	
28				.33....3322..2....424.433.343.44344.34.4.....	
29				.23222..3344414....244.3333344.444444344.....	
30				.33321.....11444..444444.4444444.....	
31				.....344.4333444.43334444.....	
32				.....444...43323.434444.....	
33				.....
34				.....
35				.....
36				.....

Legend

1 : NOT PRESENT
2 : LITTLE
3 : MODERATE
4 : MUCH
.
: NOT APPLICABLE

Map 21: verdure along streets in study-area

	1	2	3	4	5
	1234567890123456789012345678901234567890123456789012345678				
1				222222222222222222	
2				2222.....2.1.1.1	
3				2222.2211111111121.11111	
4				2222.12222.111111.1.11111	
5				111111111.1122111111.1.1111	
6				111..11111111112221111111111111	
7				222221111111111.222222..1....11111	
8				2222..111.1111.1222111.2..1....11..1	
9				2222.111111111.11111111.211111111..1	
10				222.111111111111111111112111111.11.11	
11				2222..1111111111111111111112.11111.1..1	
12				22222111111111111111111111.111112.1111111.1	
13				2222.....11111111111111111111111111	
14				2222.11..111111111111111111111111111111	
15				2222.11211.111111111111111111.....111...1...	
16				2222111111111111111112221.111..111111111111.1...1...	
17				222.11111111.11..1...11222...111..11....111..1...1...	
18				2111111121111.11..1...11..222...11..1111111.1..1...1...	
19				221.111.21111111..1...1111..222...11.11..11111111111111	
20				2211111111111111..1...11.111..222..11111111.1..1...1...	
21				221111111111111111111111..111..22211111..111..1...1...	
22				2211111111111111..1...1.111.1111..122..11..111.1...1...	
23				2211111111111111..1...1..1111111111.22...11..1112222222	
24				2211111111111111..1...1..1..1111111..222..1112222222222	
25				2211111111111111..1...1..1..11111.111..222.2222.....	
26				2211111.11111111..1...1..1.1111111.111..2222.....	
27				2211111111111111..1...1..1111111111..11222.....	
28				2211111.11111111..1...1.11....1...111222.....	
29				2211111.1...1.1111111111111111222222222.....	
30				22...11.1...1.111111111111111.1.....22.....	
31				2222222222222211..1...1.....2222222222.....	
32				22..2.....111111111222222222222222.....	
33				2222222222222211..1...1.....2.....22.....	
34				211112222222221	
35				21111....11.1.1	
36				211112222222221	

Legend

- ```

1 : NOT PRESENT
2 : PRESENT
. : NOT APPLICABLE

```

## Appendix 2 List of interviews

- Professor A.A. Abassi, Dean of the department of geography, University of the Punjab, Lahore.
  - Mr. Ayub Qutub, general manager planning, Pakistan Environmental Planning and Architectural Consultants Ltd.
  - Dr. Fareeha Zafar, staff member of the department of geography, University of the Punjab, Lahore.
  - Mr. Kamil Khan Mumtaz, architect and author of "Architecture in Pakistan".
  - Mr. Laikh Yamin Khan, deputy-director Metropolitan Planning section, Lahore Development Authority.
  - Mr. Mushtaq Ahmad, former president of the Model Town Society.
  - Mr. Parvaiz Salahuddin, Senior architect Pakistan Environmental Planning and Architectural Consultants Ltd.
  - Mr. Sattar Sikander, University of Technology and Engineering, Lahore and editor of "Proceedings on the National Seminar on planning for urban development in the developing countries".
  - Mr. Sanaullah Hashni, deputy town planner of the Lahore Development Authority.
  - Mr. Shabbir Ahmad, Lahore Development Authority.
  - Mr. Shaheen, Lahore Development Authority town planning department. Mr. Shaukat Jamal, chief metropolitan planner, Lahore Development Authority.
  - Mr. Sheikh Abdul Rashid, town planner, Lahore Development Authority. Mr. Sheikh Aziz Ahmed, associated professor of the department of geography, University of the Punjab; resident of Model Town.
  - Mr. Pervaiz Vandal, architect and author of "Lahore" and "Spatial organisation of a metropolis".
- 
- Several interviews with members of the Model Town Society.
  - several interviews at the department of geography, department of political sciences and the department of biology, Punjab University, Lahore.
  - Several interviews with architects and planners of Pakistan Environmental Planning and Architectural Consultants Ltd.
  - Several interviews at the chief metropolitan planning cell, the engineering wing, and the town planning wing of the Lahore Development Authority.
  - Several interviews at the Lahore Municipal Corporation.
  - Several interviews at the Housing and Physical planning department of the Government of the Punjab.
  - Several interviews with residents of Model Town, New Garden Town and Model Town Extension.
  - Several interviews with chairmen of several primary and secondary schools in the three schemes.
  - Several interviews with shopkeepers.
  - Several interviews with real estate managers.
  - Several interviews with private architects.
  - Several interviews with students of the geography department of the University of the Punjab, Lahore.



## Appendix 3 glossary and conversion table

### Glossary.

bazar: market area.

cantonment : military area of city.

chowkidar: caretaker, night watchman.

chauk: main market area.

civil lines: area of city inhabited by the British civilians.

gowallas cattlemen.

katchi abadis: squatter settlements.

kothi: bungalow.

mohalla: neighbourhood.

tonga: two wheeled horse-drawn carriage, seats back to back.

tube wells: springs utilized with the help of tubes.

lakh = 100,000.

kanal = 20 Marlas = 500 sq. yards.

Marla = 25 sq. yards = 225 sq. feet. (from the above it might be clear that 1 acre is equal to 9.6 kanals. In an ultimate effort to increase the plot sizes, LDA sometimes uses inofficial standards. In that case 1 Marla is equal to 272,25 sq. feet and 1 acre is equal to 8 kanals.)

### Conversion table.

1 cm = 0.3937 inch

1 inch = 2.540 cm

1 m = 1.0989 yard

1 yard = 0.91 m

1 m = 3.2808 feet

1 foot = 0.305 m

1 km = 0.6214 mile

1 mile = 1.609 km

1 m = 1.1960 yard

1 yard = 0.836 m

1 km = 0.3861 mile

1 mile = 2.59 km

1 hectare = 2.4711 acre

1 acre = 0.405 hectare

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Zaman, M.: The school you want is not the school that wants you, in: Viewpoint, May 1982.

## Notes

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- 1 USEMAP means Urban Survey Experimental Method for Analyzing Photodata.
- 2 Especially dr. Fareeha Zafar and mr. and Mrs. Pervaiz Vandal.
- 3 Note that the division in idioms is purely a concept of the mind, used by the authors for analytical purposes, but nowhere based on objective standards! They can be discerned by the trained eye without any difficulty.
- 4 Lahore today and tomorrow; 1956; (introduction).
- 5 According to the 1973-Act. See paragraph 3.7.
- 6 Although it can be stated that for low income groups the private development of Katchi Abadis is growing in importance. These settlements are often organized by "power-brokers" who rent tracts of land to slum-dwellers after having organized a squatter raid.
- 7 Kaukab does not mention explicitly where these "basic requirements of town planning" are laid down!
- 8 See paragraph 3.3.
- 9 See glossary.
- 10 Everyone who had vacated property in the part of British-India that became India could call for a comparable property in the Pakistani territory. It was of course very difficult to control and honour claims in a proper sense.
- 11 According to Mr. Mushtaq Ahmad, former president of the Model Town Society (1965).
- 12 Ayub Qutub, general manager PEPAC in an interview with the authors (November 1986).
- 13 e.g. prof. Anis Ahmad Abbassi.
- 14 The track of this proposed railway is still recognizable on the map of Lahore, e.g. in the shape of Faisal Town.
- 15 The World Bank being the main indicator, guidance and supporting institution.
- 16 Still the Survey Analysis Plan scheme of Geddes is used!
- 17 Still the influence of the neighbourhood-principle is strong!
- 18 These figures indicate a density of ca. 75-33 persons per sq.km.
- 19 According to LUDTS slums do not arise because of housing of this type, but by absence of basic services.
- 20 Totalling ca. 100 pages!
- 21 Qadeer; 1983; p.240.
- 22 Mr. S.A. Qutub; general manager planning PEPAC in an interview; november 1986.
- 23 The purchase of land is nearly always from individuals. This in contrast with the situation in some other areas (e.g. in Africa) where agricultural land is the communal possession of the village. See e.g. O'Connor; 1983.
- 24 This price was RS 20,000 / acre maximal.
- 25 Mr. S.A. Qutub, general manager planning PEPAC, in an interview with the authors. (november 1986)
- 26 N.B.: Even Pakistani geography students seem to be biased. They think of this excellent adaption to the climate, as something wrong.
- 27 Gulberg I e.g. covered an area of 126 acres and consisted of 73 plots, while Samanabad (71 acres) provided 289 plots. In other words: in Gulberg I 7 times more space is available per plot! Source: Lahore, today and tomorrow; 1956.
- 28 Namely Kot Lakhpat Industrial Area.
- 29 Shah Alami is one of the few exceptions.
- 30 Namely by students of the University of Engineering and Technology, Lahore; according to an oral announcement of prof. Pervaiz Vandal; department of Town Planning.
- 31 Mr. Sana Ullah Hashmi; assistant Town Planner LDA in an interview.
- 32 Purposely omitted from this figure are the older existing clusters of settlements, overgrown by the expanding city. These can easily form a new centre of indigenous culture. Examples in Lahore are Ichra and Davisabad.
- 33 With the accent on commercial land use.
- 34 As described by Qadeer; 1983.
- 35 This conclusion is preliminary to chapter 10 in which the results of an inquiry are analysed.
- 36 Lahore Guide Map, 1954.
- 37 Personal interview with Sheikh Aziz Ahmad.
- 38 Personal interview with Sheikh Aziz Ahmad.

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- 39 Note that the inhabitants of flats are excluded. These number about 2500, supposing that one third of all the flats are empty and that no reasons exist to reject the average number of inhabitants per dwelling, calculated earlier.
- 40 Interview with a shopkeeper.
- 41 PC-1 Model Town Extension scheme; 1975; p.5.
- 42 PEPAC being a very typical example, employing some of the best and renowned architects, and busy with the design of e.g. the Aiwan-e-Iqbal complex in Lahore and the presidential residence in Murree.
- 43 These and the following figures are taken from a leaflet of LDA ("housing").
- 44 According to Mr. Shaheen; LDA-Town Planning department.
- 45 Correa on a symposium on "the continuous urban growth" in Amsterdam, d.d. 20-3-1987.
- 46 Mushtaq Ahmad, former president Model Town Society in an interview.
- 47 Data, directly concerned with the study-area, in this and the following chapters, are obtained by means of observation, a questionnaire or via interviews, unless it is stated otherwise.
- 48 Like the factor "size of dwelling" also "age of dwelling" is checked by a question in the inquiry. Structural corrections that seemed to be necessary, have already been carried out.
- 49 Definition given in LDA building regulations; 1984; p.8.
- 50 Mr. Sheikh Abdul Rashid, in a personal interview.
- 51 Mr. Shabbir Ahmad and Mr. Sana Ullah Ashmi, in a personal interview.
- 52 Assuming a period of 25 years to pay off plot and dwelling and no interest to be paid on eventual loans, as interest is forbidden under Islamic law.
- 53 LUDTS; 1981; p.16; LUDTS; 1981; p.17.
- 54 PC-1 of Model Town Extension-scheme; 1975; p.4. PC-1 of Model Town Extension; 1975; p.5. PC-1 of Model Town Extension; 1975; p.6.
- 55 Source : Lahore, today and tomorrow; 1956.
- 56 Source: Chief Metropolitan Planning Cell; LDA; 1986.
- 57 See table 8.1; figures from 1981.
- 58 As the authors could savour at a wedding party in one of these families. Among the other guests were a former Punjab-governor and the current State minister of Finance.
- 59 The question in the inquiry concerning this aspect was meant in the first place as a check on the question on income. It is treated here according to its additional intrinsic quality.
- 60 One quarter of the respondents valued Model Town Extension as the best scheme.
- 61 A hotch-potch of answers given on a question in the inquiry.
- 62 One man answered that many "overseas Pakistani" resided in Model Town Extension.
- 63 The opening up of Model Town for new residents is thus not appreciated by every traditional Model Town resident.
- 64 An inhabitant of New Garden Town in an interview; november 1986.
- 65 In times of electricity shortage all parts of the city have to do without electricity sequentially.
- 66 Zaman, may, 1982.
- 67 Zaman, may, 1982.
- 68 Zaman, april, 1982.
- 69 Based on the results of the questionnaire.
- 70 Zaman, april, 1982, p.24-25,.
- 71 Personal interview with Mr. Ayub Qutub.
- 72 Personal interview with Mr. Sana Ullah Ashmi.
- 73 Personal interview with Mr. Sana Ullah Ashmi.
- 74 Interview with a private developer.
- 75 Observations during two mornings. Transportmedium: bicycle:22; horse/donkey:20; foot:22.
- 76 Personal interview with Mr. Sheikh Abdul Rashid.
- 77 Personal interview with Mr. Sheikh Abdul Rashid.
- 78 Numbers refer to figure 10.1.
- 79 Proposals of the Lahore Traffic Study. A park of divisional level serves a whole scheme, while a park of district level serves a block. Several neighbourhood parks are present in one block.
- 80 Personal interview with Mr. Shabbir Ahmad.

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81 According to mr. Ayub Qutub.

82 Approximately 1 shop per 40 people in Lahore, while in western countries 1 per 200 is a normal figure. (LUDTS; 1983).